

LOMONOSOV MOSCOW STATE UNIVERSITY

SKOBEL'TSYN INSTITUTE OF NUCLEAR PHYSICS

**A. I. Sladkova, G. A. Bazilevskaya, V. N. Ishkov, M. N. Nazarova,
N. K. Pereyaslova, A. G. Stupishin, V. A. Ulyev, I. M. Chertok**

**CATALOGUE
OF SOLAR PROTON EVENTS
1987-1996**

Edited by Yu. I. Logachev



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А. И. Сладкова, Г. А. Базилевская, В. Н. Ишков, М. Н. Назарова,
Н. К. Переяслова, А. Г. Ступишин, В. А. Ульев, И. М. Черток

КАТАЛОГ СОЛНЕЧНЫХ ПРОТОННЫХ СОБЫТИЙ 1987-1996

Под редакцией Ю. И. ЛОГАЧЕВА.

Каталог содержит информацию о всех солнечных протонных событиях 22 цикла солнечной активности (1987-1996 г. г.), в которых максимальная интенсивность частиц с энергией >10 МэВ на орбите Земли составляла не менее $1 \text{ см}^{-2} \text{ с}^{-1} \text{ ср}^{-1}$. Каталог состоит из двух частей. В первой части представлены данные о потоках, временных профилях и энергетических спектрах частиц в виде таблиц и графиков для каждого события, а также сведения об источниках событий. Во второй части приводится более подробная информация об источниках: солнечных вспышках, рентгеновских всплесках в различных интервалах энергий, микроволновых всплесках на фиксированных частотах и спектральном типе радиоизлучения в метровом диапазоне. Каталог рассчитан на специалистов в области солнечно-земной физики.

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The catalogue contains information on solar proton events observed during 22 solar cycle (1987-1996) with the >10 MeV proton intensity at 1 AU not lower than $1 \text{ cm}^{-2} \cdot \text{s}^{-1} \cdot \text{sr}^{-1}$. The catalogue is divided into two Parts. The data on the proton fluxes, time-intensity profiles and energetic spectra in the tabular and graphical form, and the solar sources of the observed fluxes are presented in Part 1. Part 2 includes more detailed information about the sources of the events - the solar flares, X-ray bursts in different energy bands, microwave radio bursts at the fixed frequencies, and dynamical spectra of radio emission in the meter ranges etc. The catalogue is intended for the scientists interested in the problems of solar-terrestrial physics.

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PREFACE

This Catalogue of Solar Proton Events continues a series initiated by the first Catalogue edited by Z. vestka and P. Simon for early events observations in 1955-1969 and extended by the Catalogues covering events from 1970 to 1986 the latter being prepared by the russian research team. The present Catalogue contains the data on the events observed in 1987-1996. The unique collection of the data on solar proton events covering the 19-22 solar cycles is ended with this issue. We have now the variety of data on these events presented in a unified form, namely, the proton fluxes in several energy ranges, the most probable sources of particle enhancements and the main features of the solar sources. Because more than twenty years elapsed since the issue of the first Catalogue it is no surprise that one can find some differences between the Catalogues. It should be emphasized however that the original aim changed by no means.

The most remarkable distinction is the magnitude of the event to be included in the list. The first Catalogue contains information on the events with the >10 MeV proton intensity $J(>10 \text{ MeV}) \geq 0.1 \text{ cm}^{-2} \cdot \text{s}^{-1} \cdot \text{sr}^{-1}$ before December 1965, and with $J \geq 0.01 \text{ cm}^{-2} \cdot \text{s}^{-1} \cdot \text{sr}^{-1}$ for December 1965 - December 1969. As the smaller events are increasingly detected due to new measurement methods the restriction on the proton flux was imposed for events to be included in the list of the all successive Catalogues. The latter contain the data on the events with proton fluxes $J(>10 \text{ MeV})$ not lower than $1 \text{ cm}^{-2} \text{ s}^{-1} \text{ sr}^{-1}$ in the maximum of the intensity-time profile at the Earth's orbit. It should be noted that, whereas the initial spacecraft observations of events presented in the first Catalogue were irregular, we can be quite sure that not a single substantial solar cosmic ray event has gone unnoticed since 1970 and that they all have been included in the Catalogues of 1970-1986 and in the present issue.

The present Catalogue consists of two Parts. Part 1 includes the data on the charged particle fluxes observed at 1 AU in different experiments and their probable solar sources identified by the authors. The integral proton energy spectra in the graphical form and the intensity-time profiles of proton fluxes in several energy bands are shown for each event. Part 2 presents information about the solar events indicated in Part 1 to be the sources, namely, about the optical, X-ray and radio emissions. In conclusion a Summary Table for events 1987-1996 is given. The more detailed description of the present Catalogue can be found in the Introduction.

The previous issues of the Catalogues were successfully used by many researchers for investigations of energetic solar particles. We hope that the present Catalogue will be helpful to those working in the scientific field of solar-terrestrial physics. The catalogued data can be used to perform statistical studies of accelerated solar particles, to seek for regularities in their spectral characteristics, and to study the physical processes associated with acceleration and propagation of solar particles. The energy spectra may be of assistance when developing the method for predicting radiation situation in the Earth's environments (for example, predicting radio wave propagation conditions), studying particle penetration into the Earth's magnetosphere, and correlating various geophysical events with solar activity, i.e. in terms of a more general problem of solar-terrestrial relationships.

*Professor Yuri Logachev
Moscow State University
Institute of Nuclear Physics*

INTRODUCTION

The present Catalogue includes the data on 128 solar proton events (SPE's) observed in the 22-nd solar cycle (1987-1996) with the >10 MeV proton intensity $J (>10 \text{ MeV}) \geq 1 \text{ cm}^{-2} \cdot \text{s}^{-1} \cdot \text{sr}^{-1}$ at the Earth's orbit. The SPE's are numbered from 1970, the Catalogue includes events Nos. 207-334. The method for obtaining and the presentation form of the material in the Catalogue are the same as in the Catalogues [1] and Catalogues [2-5]. Only the information necessary for understanding the material of this Catalogue is presented below. A more detailed description of the catalogued data and of the methods for obtaining them can be found in [2-5].

The Catalogue is divided into two Parts. The data of Part 1 is subdivided into tables and figures. The tables of Part 1 contain information about the charged particle fluxes in SPE's detected onboard spacecraft and on the Earth, about the temporal characteristics and the sources of the observed fluxes. The integral proton energy spectrum and intensity-time profiles of proton fluxes in several energy bands for each event are shown in the figures. Part 2 presents information about the flares indicated in Part 1 to be the SPE sources, namely, about the optical, X-ray and radio emissions in a tabular form.

In conclusion a Summary Table of the proton intensity $J(>10 \text{ MeV})$ and spectral indices of the proton energy spectra for events Nos. 207-334 observed in 1987-1995 is given. It should be pointed out that no events with the proton intensity $J(>10 \text{ MeV}) \geq 1 \text{ cm}^{-2} \cdot \text{s}^{-1} \cdot \text{sr}^{-1}$ were observed in 1996.

The particle flux data were derived mainly from the Meteor satellite original observations made by the group of the Fedorov Institute of Applied Geophysics (Federal Service for Hydrometeorology and Environmental). The particle enhancements observed by the Meteor instrument have been verified by other measurements. The GOES data on integral proton fluxes up to 1994 were taken from CD-ROM [6]. The GOES information of later years was accessed over Internet. For the events in 1987-1989 the IMP data were added from [7]. The data of balloon measurements were provided by the Lebedev Physical Institute (Russian Academy of Sciences). The neutron monitor data were taken from WDC-B [8].

Not only an individual event with a smooth intensity-time profile exhibiting a single maximum, but some of the peaks in the events with complicated time profiles were considered to be individual events if a source of one or another successive maximum could be identified. In case a source could not be identified, an event with a complicated time profile was regarded as a single event. The criteria and the methods used when identifying the solar particle events and their sources are described below.

ON THE ASSOCIATION OF THE SOLAR PROTON EVENTS

The source identification of an observed particle flux enhancement with solar flares or some other manifestation of the solar activity such as coronal mass ejections (CME), coronal and interplanetary shocks is a very complicated problem which is subject to discussion and permanent development during the last decade [10-14]. Undoubtedly, the emission of energetic particles is a phenomenon related to flares that were considered here as the main sources of SPE's. Now it is believed that the CME's and associated shocks also play a significant role in generation of energetic charged particles. However, the CME's are correlated with eruptive flares, and their relative contribution in the particle population is not clear.

At present we have no adequate method of SPE association with the CME. There are no regular data on the CME's covering long time of SPE observations. Therefore, in this Catalogue, as in the previous ones, we consider the flares as the main sources of SPE although attention was also given to other signatures of solar activity and interplanetary disturbances.

The source identification was produced by a complex analysis of the data on the intensity-time profiles and the energy spectra of charged particles, on the flare-generated electromagnetic radiation and on the characteristics of the respective solar active regions. Well established and statistically verified regularities were taken into account with no one considered as decisive.

The criteria and the methods used when identifying the sources are based on 3 groups of data as follows:

- charged particle fluxes, their time profiles, anisotropy and energy spectra;
- electromagnetic radiation in X-ray, optical and radio ranges, the spectral and time characteristics of the energy release in the flares including the post-eruptive phase;
- magnetic field, the structure and development of the active regions on the Sun, the flare and CME activity.

Here we briefly outline the main procedure.

I. Characteristics of the proton fluxes

From the intensity-time profiles of the particles with different energies, the character of the event, its structure (single or superposition) and power (the value of the maximum particle fluxes) we estimated roughly the position of the source producing this event on the eastern or western hemisphere of the Sun. In the case of a rapid increase in the proton flux (one to several hours for >10 MeV protons) and a hard spectrum (the integral power law spectrum index <3) a source most probably was located on the western hemisphere. All the flares preceding the onset of the event within ~ 10 hours were examined. In the case of a slow increase and decay in the proton flux and a softer spectrum (spectral index >3) a source flare was searched for on the eastern hemisphere during $\sim 1-3$ days preceding the onset of the SPE.

II. Electromagnetic radiation of flares

The next important step is an analysis of the electromagnetic radiation supposed to be associated with energy release during the flare and CME activity for the same time windows as mentioned in the previous item. Contrary to the previous Catalogues [2-5], we did not apply any quantitative criteria to the source identification. The most probable sources of the proton fluxes have the following features:

- long-lasting (several hours) and intensive ($>M5$) soft X-ray bursts;
- flares of large importance and duration in the optical range;
- powerful microwave radio bursts associated with a long-lasting (sometimes prevailing) component with a smooth time profile;
- metric bursts of type II and/or IV.

Available information on CME's, hard X-ray and gamma bursts was also taken into account.

III. Characteristics of the active regions

The characteristic of active regions is another important clue in the associations of the proton flux enhancement with a source. The proton events are connected more frequently with active regions that demonstrate the following features [13]:

- the magnetic configuration is very complex with the alternation of polarities within one developed sunspot group, the reversed polarity of the leading sunspot, the unusual location of spots of different polarity (for example, along the meridian); the δ - configuration in the largest sunspot, or the δ -configuration in the middle of the group between the leader spot and the following one.
- the complicated own motions of spots at large velocities are often observed.
- the flare energy release is observed as a number of rather powerful flares, one or several of which can give rise to the enhancements in proton fluxes near the Earth.

The complexes of activity should be noted which consist of two and more neighboring sunspot groups with the complex magnetic configuration connected by a common magnetic field. In such groups the powerful flares are produced at the second and even at the third rotation while in the isolated groups, even with a high flare activity, the powerful flares are rarely produced at the second rotation. An attention should be given to disappearing filaments and large scale arcades.

Finally, we perform the joint analysis of the electromagnetic radiation of the flares preceding a given particle enhancements, the parameters of the corresponding active regions, and the properties of the proton flux enhancement itself. The association was regarded as certain (marked by a symbol \bullet), probable (\odot) or doubtful (\circ) depending on to what extent (fully, partially or rather bad) the suggested flare satisfies the above requirements. The flares that contributed or might have contributed to the proton flux increase (\emptyset) were chosen in a similar way.

Particular attention should be paid to the SPE's with the complex time profile which were classified as the effect of the high flare activity. The more intensive SPE (with $J(E>10 \text{ MeV}) \sim 10\text{-}100 \text{ cm}^{-2}\cdot\text{s}^{-1}\cdot\text{sr}^{-1}$) are connected, as a rule, with a number of the flares which satisfy the requirements of "certain" association (\bullet), but their contributions are difficult to separate. Similar phenomena of lower intensity events ($J(E>10 \text{ MeV})<20\text{-}40 \text{ cm}^{-2}\cdot\text{s}^{-1}\cdot\text{sr}^{-1}$) with a relatively soft energy spectrum (spectral index >2.5) are more probably due to a number

of the flares which satisfy the requirements of probable (⊙) or doubtful (○) association. In these cases, the Catalogue lists only the most significant flares observed.

The special group is SPE's which are produced by the flares beyond the limb. The signatures implying the connection between the proton flux enhancement and the flare beyond the limbs are, for example, (a) the absence of a possible flare in the visible hemisphere; (b) passing beyond the western limb or coming from behind the eastern limb of the active region manifesting a high probability of occurrence of the proton flares; (c) observation of the metric radio bursts of type II and/or type IV and also the coronal ejections not connected with the H_{α} flares.

Finally, in some cases when a given proton flux increase failed to be associated with a flare on the disc or with the activity beyond the limb we say that its source is unknown.

In conclusion, it should be stressed once again that at present there is no entire consensus of scientific community in the problem of the SPE sources and their identification remains sometimes rather subjective. The authors hope that in the Catalogue the subjectivity was suppressed owing to a joint analysis of the whole body of data and the participation of the scientists working in different fields of solar and cosmic ray physics.

THE STRUCTURE OF THE TABLES

The heading line for each event indicates the characteristic information permitting a given event to be distinguished from the others, namely:

- number of the event;
- year, month, and day of the event;
- time (UT) of the onset of the ≥ 10 MeV proton flux increase (hours);
- importance of the event defined by Table 1.

Table 1

SPE classification according to [9]

Importance of an event	First digit	Second digit	Third digit
	≥ 10 MeV proton flux, $\text{cm}^{-2} \cdot \text{s}^{-1} \cdot \text{sr}^{-1}$	PCA at 30 MHz, dB	Neutron monitor increase, in percent
-2	$10^{-2} - 10^{-1}$	-	-
-1	$10^{-1} - 10^0$	-	-
0	$10^0 - 10^1$	no increase	no increase
1	$10^1 - 10^2$	< 1.5	$< 3\%$
2	$10^2 - 10^3$	1.5 - 4.6	3 - 10%
3	$10^3 - 10^4$	4.6 - 15	10 - 100%
4	$\geq 10^4$	> 15	$> 100\%$
X	measurements not available		
()	the digit is uncertain or implied		

For example: importance 231 means that the ≥ 10 MeV proton intensity in an event is within $10^2 - 10^3 \text{ cm}^{-2} \cdot \text{s}^{-1} \cdot \text{sr}^{-1}$, the PCA at 30 MHz is 4.6-15.0 dB, and an enhancement in the count rates of a high-latitude sea-level neutron monitor does not exceed 3%.

The first column under the heading line indicates the name of spacecraft and the type of ground-based observations. The following notation is used: MET - for Meteor, BAL - for particle flux measurements during balloon flights in the stratosphere, NM - for cosmic ray intensity measurements with neutron monitors, RIOM - for riometer measurements of the polar cap absorption at ~ 30 MHz. It should be noted that the riometer data only up to May,

1990 were available. After that the third digit in the importance of an event was indicated as "X".

Table 2 shows the type and energy of particles observed by spacecraft that are presented in the Catalogue.

Table 2

Data on the energy bands of the particles detected in different experiments

Spacecraft	Proton Energy, MeV
METEOR	>5, >15, >25, >30, >40, >90, >600
IMP8	13.7-25.2, 20-40, 40-80
GOES6,7	>10, >30, >50, >60, >100

The Meteor instrument observes proton fluxes deep in the polar cap (invariant latitudes above 67° - 70°), the passage time is 5-15 minutes. The time interval between passages over the northern and southern polar caps varies from 30 to 45 minutes depending on the satellite orbit. It should be noted that the Meteor detectors record not only protons, but also $>2 - 10$ MeV electrons.

The integral proton fluxes from the measurements with GOES instruments as inferred from the observational data by the GOES team are taken from [6] up to April, 1994 and from NGDC NOAA site over internet for later years. The hourly data on the GOES integral proton fluxes were obtained by the running averaging of the original 5-minute averages.

The IMP8 differential channels data were available only in the graphical form [7]. The values of integral fluxes were estimated using the procedure described in [3].

The balloon-borne measurements are made daily in the Murmansk region ($68^{\circ}57'N$, $33^{\circ}03'E$) and at Mirny ($66^{\circ}34'S$, $92^{\circ}55'E$). Balloons are launched more frequently during SPE's, but the onset time and the exact time of maximum in the intensity profile of the event prove, as a rule, to be missed. The proton energy is inferred from the proton residual paths in the atmosphere.

The catalogued polar cap absorption data have been obtained from a continuous series of riometer observations at four polar stations: Isl. Heiss and North Pole in the northern hemisphere, and Mirny and Vostok in the southern one. All the data relate to the time interval when the ionosphere is sunlit entirely. The presented data are taken from a station with the highest absorption.

The second column indicates the type and energy of the particles observed in a given SPE. The following notation is used: Pr>10 MeV means integral channels of protons with the energy indicated, Pr20 - 40 MeV means differential channels, PCA - the polar cap absorption at ~30 MHz due mainly to ~10 MeV proton flux.

The third column indicates the onset time (UT) in hours, (according to the Meteor and NM data in hours and minutes) of the particle flux increase and PCA effect. The moment from which a particle flux of a given energy began increasing monotonously was taken to be a proton flux increase onset. The moment when absorption began exceeding 0.2 dB was taken to be a PCA effect onset.

The fourth column indicates the time (UT) in hours, (according to the Meteor and NM data in hours and minutes) when the highest enhancements were observed. The respective moments for complicated events with two and more pronounced maxima are separated by the symbol "/". The start and the end of a time interval when the maximum values were observed for the events with extended maxima are separated by dash "-".

The times presented in the third and fourth columns relate to the event date indicated on the heading line. If an onset or a maximum was observed on another day, a number with subscript "d" indicating the day of the respective moment is introduced before the numerals designating time. The symbols ">" and "<" mean that an onset or a maximum occurred, respectively, later or earlier than the time presented.

The times indicated for the Meteor satellite are specified within ± 7 min. It should be noted that because of discrete passages through polar regions the real times of onset and maximum could be observed not earlier than 30 minutes before the time indicated. The times for stratospheric observations are specified within ± 30 minutes though the real times of an event onset and maximum intensity may be omitted because of discrete balloon launchings. The table indicates the time when the onset of SPE was actually recorded and the highest flux in the entire set of launchings for a given event was actually observed. The times of the PCA data are specified within up to ± 1 hour. The NM time resolution is indicated for each station separately in the third column with symbol "V".

In the fifth column the numerals presented indicate duration of a given event in days ("d") or hours ("h"). The symbols ">" and "<" have the commonly accepted meaning. The duration of individual events is defined to be a time interval from an onset to the moment when the intensity is assumed to be at the background level. In the cases when an event was

observed during the high background from a previous event, only the lower duration limit is indicated for the previous event. For majority of events the duration was specified within 0.5 day.

The sixth column presents the peak values of the proton intensity in units of $\text{cm}^{-2}\cdot\text{s}^{-1}\cdot\text{sr}^{-1}$ observed in the event with the integral channels of Meteor, and in units of $\text{cm}^{-2}\cdot\text{s}^{-1}\cdot\text{sr}^{-1}\cdot\text{MeV}^{-1}$ for differential channels of IMP 8. The NM maximum count rate enhancement relatively to the count rate preceding an event is given in percent. In the case of PCA, the sixth column indicates the maximum absorption in dB within up to ± 0.1 dB.

The abbreviated names of neutron monitors stations are as the following: APAT for Apatity, GSBY for Goose Bay, INVK for Inuvik, MCMD for McMurdo, MWSN for Mawson, OULU for Oulu, SNAE for Sanae, TERA for Terre Adelie, THUL for Thule, and TXBY for Tixie Bay. The statistical accuracy of the NM- measured intensities is not worse than 1%.

In the case of complex events with two and more maxima, the column indicates two or more values of intensities separated by the symbol “/” in accordance with the time moments specified in the fourth column. The presented values have been obtained by subtracting the background for isolated events. In the case of an event observed against the background of a previous event, the contribution of the latter was not subtracted and only the background value observed before the first maximum within a day was taken into account.

The lines under the columns present the data on SPE source. The following notation is used [1]:

- ☉ - a flare on the Sun's visible hemisphere;
- - a flare (or activity) at/or behind the western or eastern limb of the Sun ;
- ◇ - activity on the solar disk;
- particle flux variations relevant to SC.

The source (or sources) presented for each SPE and. the confidence degree of identifying a given source for the event were determined on the basis of the concepts described in the section “On the Association of the Solar Proton Events”. In the case of several associations suggested, their order reflects, to some extent, the probability we ascribe to them.

The lines relating to a flare on the solar disk as the source indicate the following: the time (UT) of H_{α} flare onset in hours and minutes, coordinates, importance of a flare, and

active region (AR) according to [7]. The square bracket encloses the flares which cannot be separated by X-rays and/or radio emission.

In the case of supposed activity behind the western or eastern limb the active region and information about the type II and/or IV bursts are indicated if they were available:

The sudden commencements (SC) observed throughout a given SPE are shown (time in hours and minutes) including the cases not coinciding in time with particular particle flux profile variations.

In all cases where the observed time does not relate to the date indicated in the heading line, a numeral with index "d" showing the day for a given time is presented.

PROTON ENERGY SPECTRA AND INTENSITY-TIME PROFILES

A separate page is devoted to each SPE. The heading line of each page indicates:

- the number of the event
- the date of the event
- T_{\max} (UT) - the time of detection of the maximum in the particle fluxes. The symbol "-" separates the commencement and end of the time interval within which the maximum proton fluxes were observed; the ordinal numbers *max1*, *max2* are assigned to consecutive maxima in the complicated events with several maxima presented in the tables of Part 1 by the symbol "/".

The next lines duplicate information about the source (sources) of a given event.

The integral energy spectra of proton fluxes at the moment (moments) of the flux maximum are depicted for each SPE. Plotted as the abscissa is the particle energy E in MeV, and as the ordinate - $J(>E)$ - the flux of protons with the energy larger than E in units of $\text{cm}^2 \cdot \text{s}^{-1} \cdot \text{sr}^{-1}$. The various symbols indicate the values of the integral proton fluxes measured in different experiments. The transformation from the differential fluxes observed by IMP-8 to the integral fluxes were performed in the same manner as described in detail in [3]. As mentioned above we used the data on the integral proton fluxes from the measurements with GOES instruments as inferred from the observational data by the GOES team. Similarly to the Catalogues [3, 5], the >500 MeV solar proton intensity plotted in figures has been inferred from the data of ground-based worldwide network neutron monitors using the method described in [3].

The straight lines in the plots fit the energy spectra by the power law function $J(>E) \sim E^{-\gamma}$. The value of the spectral index γ for each of the presented spectra is indicated nearby. The spectra not corresponding to the time of the flux maxima are shown with dashed lines, the respective time (UT) being indicated near the spectra. If a spectrum cannot be described by a single power law throughout the entire energy range, the approximating straight lines are drawn in several energy bands and the appropriate values of spectral index are indicated for each interval. If the proton fluxes measured in different experiments are not consistent two spectra are presented for the same time.

For the complicated events, two or more spectra are presented according to the number of the maxima indicated in the heading line. In such cases the ordinal number of a maximum is indicated near the spectrum. Some spectra in the complicated events are provided with their own abscissas or ordinates labeled with the respective ordinal number of the maximum. It should be repeated that the background was not subtracted in such cases separately for each maximum.

The proton time-intensity profiles are shown in the lower part of a sheet for each event. The energy of protons and the spacecraft taking a measurement are indicated. The smoothed hourly data were obtained by the running averaging of Meteor and GOES data. The time profiles are plotted without subtracting the galactic cosmic ray background.

DESCRIPTION OF PART 2

The Part 2 presents data on the solar sources of SPE's which have been identified in Part 1 as certain (☛), probable (☉), possible (○), or contributing (⊖) ones.

The heading line for each source indicates:

- year, month, and day of the source;
- the confidence degree of association the event with a given source;
- the active region (AR) number;
- the number of the event;
- importance of the event as defined by Table 1.

The first column under the heading line indicates the type of observational data accompanying a given source: H_{α} flares, soft X-rays, hard X-ray bursts in the different energy ranges, solar radio emission at fixed frequencies, and the dynamic spectra of metric bursts. The information presented below are taken mostly from [7]. The data on soft X-ray are from GOES. For 1987-1989 we make use of the results of solar hard X-ray monitoring during SMM mission [15-17].

The next three columns describe the temporal evolution of each type of the solar events observed. The onset, maximum, and end, respectively, are indicated in hours and minutes (UT). The symbols ">" and "<" mean that an onset, maximum, or end of the solar event occurred, respectively, later or earlier than the time presented.

In the fifth column the next information is shown:

- for H_{α} flares - the coordinates of the flare on the solar disk;
- for radio bursts - the coded type of the flux density spectrum at decimetric and centimetric wavelengths.

The notation of the coded type is the same as it used in the previous Catalogues [1-5]:

- P5 - means that the frequency spectrum shows a peak at 5 GHz, P5(2.3) means that log of the maximum flux at 5 GHz is 2.3 (the maximum density of the flux is $200 \cdot 10^{-22} \text{ W} \cdot \text{m}^{-2} \cdot \text{Hz}^{-1}$);
- U1/9 - means that the flux density has a minimum at 1 GHz and rises up to 9 GHz; no measurements are available at higher frequencies;
- /9 - has the same meaning, but the frequency of the minimum flux is not known;

- 0.6/0.9 - means that the flux density rises toward high frequencies;
 U2 P7 - means that the flux density is minimum at 2 GHz and it peaks at 7 GHz;
 3-9 - means that the flux density spectrum is flat in the 3-9 GHz frequency band.

The notation is shown with the square brackets if the data on the flux density spectrum were either incomplete or conflicting.

In the sixth column the presented data show the size of the observed events:

- for H_{α} flares - the optical importance of the flare;
 for soft X-rays - the X-ray class of the burst according to Table 3;
 for hard X-rays - the total number of photons/event from SMM data;
 for radio bursts - the decimal logarithm of the peak flux density in units of $10^{-22} \text{ W} \cdot \text{m}^{-2} \cdot \text{Hz}^{-1}$.

Table 3

X-ray classes according to the order of magnitude of the peak intensity in the 0.1 to 0.8 nm band.

Class	Intensity, W/m^2	Intensity, $\text{Ergs/cm}^2 \cdot \text{s}$
B	$<10^{-6}$	$<10^{-3}$
C	$\geq 10^{-6} - <10^{-5}$	$\geq 10^{-3} - <10^{-2}$
M	$\geq 10^{-5} - <10^{-4}$	$\geq 10^{-2} - <10^{-1}$
X	$\geq 10^{-4}$	$\geq 10^{-1}$

In the last column the coded remarks according to the IAU system for H_{α} flares from [7] are included that show the details of the optical observations.

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PART 1

207		1987 May 29		17	000
MET	Pr>5 MeV	1727	2000	1.1 d	7.01
MET	Pr>15 MeV	1727	2000	15 h	0.95
MET	Pr>25 MeV	1727	1816	15 h	0.11
MET	Pr>30 MeV	1727	1911	15 h	0.07
IMP8	Pr13.7-25.2 MeV	>12	<30d02	>20 h	0.03
IMP8	Pr20-40 MeV	>12	<30d02		0.006
IMP8	Pr40-80 MeV	>12	<30d02	>20 h	0.0005

Source: ☐ active region AR 4811 2 d beyond W limb
☐ active prominence <1710 N28 W90

208		1987 October 16		11	000
MET	Pr>5 MeV	1109	1159	1.8 d	27.8
MET	Pr>15 MeV	1109	1254-1345	0.5 d	2.13
MET	Pr>25 MeV	1109	1254	0.5 d	0.24
MET	Pr>30 MeV	1109	1254	0.5 d	0.095
IMP8	Pr13.7-25.2 MeV	10	20	16 h	0.0035
IMP8	Pr20-40 MeV	10	18	16 h	0.0006
IMP8	Pr40-80 MeV	10	17	16 h	0.00015

Source:  flare 0950 N22 W09 1B AR 4866

209		1987 November 8		00	120
MET	Pr>15 MeV	0021	1138	1.5 d	7.65
MET	Pr>25 MeV	0355	1138	20 h	0.73
MET	Pr>40 MeV	0258	1138	18 h	0.11
IMP8	Pr13.7-25.2 MeV	00	12	3 d	1.2
IMP8	Pr20-40 MeV	00	12	3 d	0.13
IMP8	Pr40-80 MeV	00	12	3 d	0.007
RIOM	PCA	07	10/17/21	2.6 d	1.1/2.1/1.1

Source: ☒ active region AR 4866 is 1.5 days beyond W limb
☐ flare 7d2028 N31 W90 1N AR 4875
☒ SC 7d0325

210		1987 December 29		<16	010
IMP8	Pr13.7-25.2 MeV	<16	<31d03	3.5 d	0.18
IMP8	Pr20-40 MeV	<20	<31d03	3.5 d	0.028
IMP8	Pr40-80 MeV	<20	<31d03	3.5 d	0.0012
RIOM	PCA	30d10	31d02	1.7 d	0.4

Source: ☒ activity of the region AR 4912

211		1988 January 2		22	120
MET	Pr>5 MeV	2157	3d0918	>3.4 d	215
MET	Pr>15 MeV	2343	3d1101	3.4 d	31
MET	Pr>25 MeV	3d0035	3d1101	3 d	5.6
MET	Pr>30 MeV	3d0035	3d1101	3 d	4.7

MET	Pr>40 MeV	3d0130	3d1101	2.1 d	1.3
IMP8	Pr13.7-25.2 MeV	>20	<3d10	>6 d	3
IMP8	Pr20-40 MeV	>20	<3d10	>5 d	0.5
IMP8	Pr40-80 MeV	>20	<3d10	>4 d	0.04
RIOM	PCA	3d0100	3d14	3.8 d	1.6

Source: * flare 2111 S35 W18 3N AR 4912

212	1988	March 25		22	110
MET	Pr>15 MeV	2223	2318	1.1 d	35
MET	Pr>25 MeV	2223	2318	12 h	7.8
MET	Pr>30 MeV	2223	2318	12 h	6.5
MET	Pr>40 MeV	2223	2318	7 h	3.7
MET	Pr>90 MeV	2223	2318	4 h	0.54
IMP8	Pr13.7-25.2 MeV	23	26d01	>2 d	0.6
IMP8	Pr20-40 MeV	23	26d01	5 d	0.2
IMP8	Pr40-80 MeV	23	26d00	4 d	0.05
RIOM	PCA	23	26d00	0.8 d	0.6

Source: ☉ flare 2127 S28 W82 SF AR 4964
 ☐ eruptive prominence <2145 N21 W90 AR 4965
 ▲ SC 27d1347

213	1988	June 30	05	100	
MET	Pr>5 MeV	0509	1526	6.8 d	68
MET	Pr>15 MeV	1036	1308	1.6 d	10
MET	Pr>25 MeV	1036	1219	1.1 d	1.4
MET	Pr>30 MeV	1036	1308	1.1 d	1.4
MET	Pr>40 MeV	1036	1308	1.4 h	0.49
IMP8	Pr13.7-25.2 MeV	>04	<12	>3 d	0.35
IMP8	Pr20-40 MeV	>04	<12	4.5 d	0.09
IMP8	Pr40-80 MeV	>04	<12	4 d	0.0013

Source: * flare 0903 S16 E23 2B AR 5060
 ☐ flare 29d0722 S19 E24 2B AR 5058A
 ☐ flare 29d2015 S19 E27 1B AR 5060
 ▲ SC 29d0429

214		1988	August 24	04	010
MET	Pr>5 MeV	23d2351	25d01/26d0118	>8.5 d	6.2/73
MET	Pr>15 MeV	0408	25d0009/26d0118	4 d	1.8/0.9
MET	Pr>25 MeV	0408	2315	1.8 d	0.24
IMP8	Pr13.7-25.2 MeV	04	/26d01	8 d	/0.06
IMP8	Pr20-40 MeV	<25d12	/26d01	8 d	/0.009
IMP8	Pr40-80 MeV	<25d12	/<25d12	6.5 d	/0.0005
RIOM	PCA	25d12	/26d02	6.5 d	/0.9

Source: ☉ flare 23d1757 N24 E88 SF AR 5123A
 ☐ flare 23d0820 N16 E31 2N AR 5122
 ▲ SC 25d0932

215	1988	September 27		21	000
MET	Pr>5 MeV	2123	28d1441	2.2 d	19
MET	Pr>15 MeV	2123	28d1441	2 d	1
MET	Pr>25 MeV	2123	28d1018	1.8 d	0.68
MET	Pr>30 MeV	2123	28d1203	1.8 d	0.27
IMP8	Pr13.7-25.2 MeV	20	<28d12	5.5 d	0.03
IMP8	Pr20-40 MeV	20	<28d12	5.5 d	0.02
IMP8	Pr40-80 MeV	20	<28d12	5.5 d	0.002

Source: ● flare 1606 S28 E66 2B AR 5171
▲ SC 28d2045

216	1988	October 5		03	000
MET	Pr>5 MeV	<0856	1319	1.3 d	9.39
MET	Pr>15 MeV	<0949	16	20 h	0.52
MET	Pr>25 MeV	<0949	1745	20 h	0.14
MET	Pr>30 MeV	<0949	1745	20 h	0.02
IMP8	Pr13.7-25.2 MeV	03	12	>1 d	0.03
IMP8	Pr20-40 MeV	03	12	1 d	0.005
IMP8	Pr40-80 MeV	03	12	1 d	0.0003

Source: ◆ activity of the region AR 5171
○ flare 3d1449 S27 W17 2B AR 5171
○ flare 3d2322 S28 W19 2B AR 5171
○ flare 0616 S30 W38 2B AR 5171
▲ SC 4d2015, 5d1646, 6d0038

217	1988	October 12	02	000	
MET	Pr>5 MeV	0217	-0727	1.8 d	75
MET	Pr>15 MeV	0543	0727	1.3 d	5.9
MET	Pr>25 MeV	0543	0727	1.1 d	1.7
MET	Pr>40 MeV	0543	0727	12 h	0.89
MET	Pr>90 MeV	0543	0727	10 h	0.06
IMP8	Pr13.7-25.2 MeV	02	>04	>1 d	>0.06
IMP8	Pr20-40 MeV	02	>04	>1 d	>0.01
IMP8	Pr40-80 MeV	02	>04	>1 d	>0.0008

Source: ● flare 0456 S21 W68 2N AR 5175

218	1988	October 13		<21	000
MET	Pr>5 MeV	<2100	2243	1.5 d	6.1
MET	Pr>15 MeV	<2100	2243	1.1 d	2
MET	Pr>25 MeV	<2100	2243	17 h	0.55
MET	Pr>40 MeV	<2100	2243	15 h	0.21
IMP8	Pr13.7-25.2 MeV	<22	14d(00-04)	>3 d	0.05
IMP8	Pr20-40 MeV	<22	14d(00-04)	3 d	0.015
IMP8	Pr40-80 MeV	<22	14d(00-04)	3 d	0.0025

Source: ● flare 2030 S20 W88 SN AR 5175

219	1988	November 8		13	110
MET	Pr>5 MeV	1314	1826	5 d	37
MET	Pr>15 MeV	1314	2009	3.6 d	15
MET	Pr>25 MeV	1314	2009	3.6 d	4.3
MET	Pr>40 MeV	1314	2009	2 d	2.5
MET	Pr>90 MeV	1314	1553	1.1 d	0.49
IMP8	Pr13.7-25.2 MeV	12	<23	>5 d	0.25
IMP8	Pr20-40 MeV	12	<23	>5 d	0.08
IMP8	Pr40-80 MeV	12	<23	>5 d	0.025
RIOM	PCA	14	21	3 d	0.6

Source: ☛ flare 1229 N17 W07 2N AR 5222
▲ SC 9d0604, 11d0753

220	1988	November 14		00	010
MET	Pr>5 MeV	0011	0249	2.2 d	20
MET	Pr>15 MeV	0011	0106	1 d	5.4
MET	Pr>25 MeV	0011	0106	19 h	1.6
MET	Pr>40 MeV	0011	0106	16 h	0.81
MET	Pr>90 MeV	0011	0011	7 h	0.06
RIOM	PCA	01	02	1 d	0.55

Source: ☛ flare 13d2247 S24 W27 1B AR 5227

221	1988	November 24		05	000
MET	Pr>5 MeV	2142	/25d0525	2.1 d	/4.5
MET	Pr>15 MeV	25d0108	/25d0525	10.3 h	/0.95
MET	Pr>25 MeV	25d0108	/25d0525	9.3 h	/0.33
IMP8	Pr13.7-25.2 MeV	05	12/<25d02	3 d	0.016/0.018
IMP8	Pr20-40 MeV	05	12/<25d02	3 d	0.006/0.006
IMP8	Pr40-80 MeV	05	12/<25d02	3 d	0.003/0.0015

Source: ☐ activity on W-limb
type II burst 0555-0601; no flare reported

222	1988	December 13		10	(0)10
MET	Pr>5 MeV	0950	1230	17 h	16
MET	Pr>15 MeV	0950	1230	14 h	0.75
MET	Pr>25 MeV	0950	1321	13 h	0.55
RIOM	PCA	10	11	2 h	0.45

Source: ☉ flare 1029 N20 W40 1B AR 5265
▲ SC 14d1337

223	1988	December 14		13	110
MET	Pr>5 MeV	1248	15d0655	>1.9 d	37
MET	Pr>15 MeV	1248	15d0655	>1.9 d	9.9
MET	Pr>25 MeV	1248	15d0655	>1.9 d	3
MET	Pr>40 MeV	1248	15d0655	>1.9 d	1.8
MET	Pr>90 MeV	1248	15d0602	>1.9 d	0.76
BAL	Pr>100 MeV		15d0800	>1 d	0.35

BAL	Pr>150 MeV		15d0800	>1 d	0.20
RIOM	PCA	00	06	>2 d	0.4

Source: ⊙ flare 1337 N30 E59 1N AR 5278
 ⊘ flare └15d0445 N27 E58 2B AR 5278
 └15d0446 N28 E64 1N AR 5280
 ▲ SC 1337

224	1988	December 16		11	110
MET	Pr>5 MeV	1043	17d1101	>10 d	75
MET	Pr>15 MeV	1043	17d1101	>10 d	15
MET	Pr>25 MeV	1043	17d1101	>7.4 d	4.5
MET	Pr>40 MeV	1043	17d1101	4.9 d	2.9
MET	Pr>90 MeV	1043	17d0034	3.2 d	1
MET	Pr>600 MeV	1043	1741	1.1 d	0.03
BAL	Pr>100 MeV	1100	1800-2200	2 d	0.7
BAL	Pr>200 MeV	1100	1800-2200	2 d	0.45
BAL	Pr>300 MeV	1100	1800-2200		0.3
BAL	Pr>500 MeV	1100	1800-2200		0.2
RIOM	PCA	<17d00	17d14/18d08	3 d	0.55/0.75

Source: ☛ flare 0826 N27 E33 2B AR 5278
 ☐ flare 17d0451 N29 E28 SN AR 5278
 ⊘ flare <17d1732 S14 W35 1B AR 5272
 ▲ SC 17d1824

225	1988	December 27		08	000
MET	Pr>5 MeV	0857	<1541	1.6 d	>16
MET	Pr>15 MeV	0857	<1541	1.5 d	>4.3
MET	Pr>25 MeV	0857	<1541	1.4 d	>1.4
MET	Pr>40 MeV	0806	<1541	23 h	>0.65
MET	Pr>90 MeV	0806	<1541	21 h	>0.09

Source: ☐ type II burst 0712-0911; no flare reported
 ☐ active prominence <0435->1031 S22 W90 AR 5282
 ○ flare └0527 N21 W36 SN AR 5285
 └0520 S17 E17 SF AR 5292

226	1988	December 29		01	000
MET	Pr>5 MeV	0047	0140	16 h	6
MET	Pr>15 MeV	0047	0140	5 h	1.27
MET	Pr>25 MeV	0047	0047	5 h	0.26

Source: ☛ flare 28d2342 N20 W54 1B AR 5285

227	1989	January 4		19	000
MET	Pr>5 MeV	1849	1941	4.1 d	43
MET	Pr>15 MeV	1849	2047	1.1 d	2.5
MET	Pr>25 MeV	1849	2047	16 h	0.28

Source: ☛ flare 1603 S20 W60 1N AR 5303

228	1989	March 7		05	220
MET	Pr>5 MeV	0113	<10d0942	>4 d	>280
MET	Pr>15 MeV	0537	<10d0942	>4 d	>24
MET	Pr>25 MeV	0537	<10d0942	>4 d	>2
MET	Pr>40 MeV	0537	<10d0942	3.7 d	>0.41
RIOM	PCA	19	8d09/8d18/ (9d22-10d08)		0.7/1.2/ 1.8

Source: ♦ high flare activity of the region AR 5395

- Ø flare 6d1354 N33 E71 3B AR 5395
- Ø flare 0519 N30 E69 1N AR 5395
- Ø flare 1436 N31 E65 2B AR 5395
- Ø flare 8d0825 N34 E55 2B AR 5395
- Ø flare 9d1515 N30 E38 4B AR 5395
- ▲ SC 8d1755

229	1989	March 10	<22		230
MET	Pr>5 MeV	<11d12	11d(12-22)/<13d0851	>6 d	160/640
MET	Pr>15 MeV	<11d12	11d(12-22)/<13d0851	>5 d d	25/50
MET	Pr>25 MeV	<11d12	11d(12-22)/<13d0851	>3 d	4.4/4.6
MET	Pr>40 MeV	<11d12	11d(12-22)/<13d0851	>2.5 d	1.8/0.52
MET	Pr>90 MeV	<11d12	11d(12-22)	>2 d	0.3
RIOM	PCA	<22	11d(00-12)/13d02/ 13d06/13d09	>6.2 d	0.9/2.7/ 10.6/4.5

Source: ♦ high flare activity of the region AR 5395

- Ø flare 1837 N32 E22 3B AR 5395
- Ø flare 11d1933 N27 E10 2B AR 5395
- Ø flare 13d0259 N29 W02 3N AR 5395
- ▲ SC 13d0127

230		1989	March 17	18	320
MET	Pr>5 MeV	1756	18d1352	>6 d	1900
MET	Pr>25 MeV	1756	18d0936	2.3 d	21
MET	Pr>40 MeV	1756	18d0936	1.8 d	4
RIOM	PCA	<18	18/18d14	3.5 d	0.8/4.2

Source: * flare 1729 N33 W61 2B AR 5395

- ▲ SC 19d0423

231	1989	March 23	21	110	
MET	Pr>5 MeV	2035	2126	8.2 d	360
MET	Pr>25 MeV	2035	2126	23 h	9.9
MET	Pr>40 MeV	2035	2126	11 h	2.4
MET	Pr>90 MeV	2035	2126	7 h	0.06
RIOM	PCA	21	24	0.7 d	0.6

Source: * flare <1925 N18 W28 3B AR 5409

232	1989	April 9	13	010
MET	Pr>5 MeV	1328	11d0939	>2 d 68
MET	Pr>15 MeV	1658	11d0754	>1.9 d 4.6
MET	Pr>25 MeV	1658	11d0754	>1.9 d 0.3
MET	Pr>40 MeV	1609	11d0701	>0.5 d 0.05
RIOM	PCA	11d00	11d04	>9 h 0.5

Source: * flare 0044 N35 E28 3N AR 5441
▲ SC 11d1435

233	1989	April 11	14	220
MET	Pr>5 MeV	1404	12d0349/13d0223	10.5 d 980/490
MET	Pr>15 MeV	1455	2333/13d0223	6 d 73/40
MET	Pr>25 MeV	1455	2333/13d0223	3.5 d 6.7/3
MET	Pr>40 MeV	1455	2333/13d0223	2.5 d 1.2/0.3
RIOM	PCA	<12	12d04/13d03	7 d 4.5/3.4

Source: no flare patrol 10d(2137-2206)
⊙ X-ray LDE burst M1.2 10d(2134->2357) N40 W08
▲ SC 1435, 13d2224

234	1989	April 22	05	010
MET	Pr>5 MeV	0503	23d1827	>13 d 33
MET	Pr>15 MeV	0503	23d1827	>13 d 7.6
MET	Pr>25 MeV	0503	23d1827	13 d 1.9
MET	Pr>40 MeV	0503	23d1827	3 d 0.81
RIOM	PCA	00	23d19/25d02	12.3 d 0.9/0.6

Source: unknown
○ flare 0332 N12 W38 SN AR 5451
○ flare 0545 N12 W39 1N AR 5451
□ region AR 5464 is just before E-limb

235	1989	May 5	10	120
MET	Pr>5 MeV	0932	(12-21)/6d1410	>3 d 84/220
MET	Pr>15 MeV	0932	2055/6d1410	3 d 4/7.3
MET	Pr>25 MeV	1207	2055/6d1410	2 d 0.5/0.44
RIOM	PCA	<08	13/6d15/7d15	>3.4 d 0.9/1.6/1.2

Source: activity of regions AR 5464, 5470
⊙ flare 4d1032 S22 W33 2N AR 5464
⊙ flare 0720 N30 E04 2B AR 5470
⊙ flare 6d1442 S20 W65 SF AR 5464
▲ SC 4d2351, 7d0512

236	1989	May 20	11	110
MET	Pr>5 MeV	1115	(21d07->23d04)/ 23d1445	16 d >21/ 510
MET	Pr>15 MeV	1115	21d(06-22)/23d1300	11.5 d 4.8/9
MET	Pr>25 MeV	1300	21d(06-22)	>5.8 d 1.5

MET	Pr>40 MeV	1300	21d(0529-0618)	>5.8 d	0.89
MET	Pr>90 MeV	1300	21d0346	5 d	0.65
RIOM	PCA	22d14	23d14/25d(04-16)	7 d	1/0.6

Source: ☐ X-ray C1.9; C5.2 0919-1308 and bursts of type II
0921-0927, of type IV 0922-0956; no flare reported
☐ flare 22d0000 S21 E15 2B AR 5497
☒ SC 0957, 1545, 22d2109, 23d1346

237	1989	June 14		>11	(0)00
MET	Pr>5 MeV	>1113	<2224	>9 h	>11
MET	Pr>15 MeV	>1113	<2224	>9 h	>1.6
MET	Pr>25 MeV	>1113	<2224	>9 h	>0.7

Source: ☐ flare 1350 S14 W78 1N AR 5521
☒ SC 0107

238	1989	June 18		15	100
MET	Pr>5 MeV	>0855	<2150/>19d19	>1.6 d	>23/>2.4
MET	Pr>15 MeV	>0855	<2150/>19d19	>1.5 d	>7.9/>1
MET	Pr>25 MeV	>0855	<2150	>8 h	>2.3
MET	Pr>40 MeV	>0855	<2150	>5 h	>1.2
MET	Pr>90 MeV	>0855	<2150	>5 h	>0.19

Source: ☒ flare 1440 N12 W30 SF AR 5536
☐ flare 19d0529 N19 W58 1N AR 5528

239	1989	June 20		<22	000
MET	Pr>5 MeV	<2226	21d0012	>2.2 d	3.7
MET	Pr>15 MeV	<2226	2319	5 h	0.94

Source: ☒ flare 2153 N17 W82 1N AR 5528
☐ flare 1455 N24 W70 3N AR 5528

240	1989	June 29		08	010
MET	Pr>5 MeV	0513	>09		>12.6
MET	Pr>15 MeV	08	>08		>0.8
RIOM	PCA	08	12	0.5 d	0.4

Source: ☐ flare 28d1808 N20 E04 1N AR 5569
☐ flare 0257 N30 W26 2N AR 5555

241	1989	June 29		22	010
MET	Pr>5 MeV		<2322	>1 d	>68
MET	Pr>15 MeV		<2322	1 d	>3.6
MET	Pr>25 MeV		<2322	>0.5 d	>0.5
RIOM	PCA	22	30d03/30d11	0.8 d	0.6/0.4

Source: * flare 2057 N30 W41 1N AR 5555

242	1989	June 30	23	010
MET	Pr>5 MeV	2248	1d0643	>1.5 d 21
MET	Pr>15 MeV	1d06	1d0643	0.56
RIOM	PCA	1d01	1d02/1d09/1d14	1 d 1.2/1.1/0.9

Source: ◇ activity of regions AR 5569, 5572

- Ø flare 0609 S17 E88 1N AR 5572
- Ø flare 1450 N20 W23 1N AR 5569
- Ø flare 1736 N20 W24 SN AR 5569
- ▲ SC 1d0717, 1d1546

243	1989	July 25	09	112
MET	Pr>5 MeV	>0740	<1706	>3.5 d >62
MET	Pr>15 MeV	>0740	<1706	>2.5 d >31
MET	Pr>25 MeV	>0740	<1706	>1.6 d >9.3
MET	Pr>40 MeV	>0740	<1706	>1.5 d >5.4
MET	Pr>90 MeV	>0740	<1706	>1.5 d >1.5
NM	Pr>1 GV	0853V2	0902-0904	2 h 7.6% THUL
RIOM	PCA	08	12/18/26d07	1.6 d 1.4/1.1/0.7

Source: * flare 0839 N26 W85 1B AR 5603

244	1989	August 12	<17	330
MET	Pr>5 MeV	<1713	>13d0436	>2.7 d >13000
MET	Pr>15 MeV	<1713	>13d0436	>2.7 d >7600
MET	Pr>25 MeV	<1713	>13d0436	>2.7 d >2000
MET	Pr>40 MeV	<1713	>13d0436	2.7 d >1100
MET	Pr>90 MeV	<1713	>13d0436	3.3 d >40
MET	Pr>600 MeV	<1713	>13d0436	2.5 d >0.86
BAL	Pr>150 MeV	<13d0510	13d0900	>1.5 d 1.7
BAL	Pr>200 MeV	<13d0510	13d0900	>1.5 d 0.7
BAL	Pr>300 MeV	<13d0510	13d0900	>1.5 d 0.2
RIOM	PCA	16	13d02/13d07/13d19	>2.3 d 12.6/11.6/11.2

Source: * flare 1357 S16 W38 2B AR 5629

- Ø flare 14d0031 S15 W60 3B AR 5629
- ▲ SC 14d0152, 14d0613

245	1989	August 15	04	220
MET	Pr>5 MeV	0420	>1954	>0.9 d >1160
MET	Pr>15 MeV	0420	>1807	>0.9 d >236
MET	Pr>25 MeV	0420	>1807	>0.9 d >34
MET	Pr>40 MeV	0420	1715	>0.9 d 6.81
RIOM	PCA	<04	18	>0.9 d 4.2

Source: * flare 0142 S16 W73 1N AR 5629

246		1989 August 16		02	333
MET	Pr>5 MeV	0254	>0528	>1.3 d	>2900
MET	Pr>15 MeV	0254	>0528	>1.3 d	>990
MET	Pr>25 MeV	0201	>0528	>1.3 d	>270
MET	Pr>40 MeV	0201	>0528	>1.3 d	>150
MET	Pr>90 MeV	0201	>0528	>1.3 d	>47
MET	Pr>600 MeV	0201	0345	1.3 d	0.89
BAL	Pr>150 MeV	<0630	07-09	1 d	10
BAL	Pr>200 MeV	<0630	07-09	1 d	4
BAL	Pr>300 MeV	<0630	07-09	1 d	1.5
BAL	Pr>500 MeV	<0630	07-09	1 d	0.25
NM	Pr>1 GV	0200V5	0310-0315	16 h	15.5% TERA
RIOM	PCA	<01	14	>1.3d	6.1

Source: * flare 0058 S15 W85 2N AR 5629

▲ SC 17d1541

247		1989 August 17		<08	230
MET	Pr>5 MeV	>06	<1658	>1.5 d	>2200
MET	Pr>15 MeV	>06	<1658	>1.5 d	>750
MET	Pr>25 MeV	>06	<1658	>1.5 d	>170
MET	Pr>40 MeV	>06	<1658	>1.5 d	>77
MET	Pr>90 MeV	>06	<1658	>1.5 d	5.7
BAL	Pr>100 MeV	>0430	0800	2 d	10
BAL	Pr>200 MeV	>0430	0800	2 d	0.5
BAL	Pr>300 MeV	>0430	0800	2 d	0.09
RIOM	PCA	<08	10/16	>2.1 d	5.1/5.4

Source: * flare 0132 S17 W88 SN AR 5629

▲ SC 1541

248		1989 August 19		<10	220
RIOM	PCA	<10	20d02	>3 d	3.5

Source: ■ active region AR 5629 is two days beyond W-limb
X-ray bursts C1.8 1638-1643, C8.2 1915-2130, and type II bursts
1542-1612, 1948-2006

○ flare 1911 N27 E02 1N AR 5645

▲ SC 21d1415

249		1989 August 22		09	110
MET	Pr>5 MeV	0855	>1828	>12 d	>320
MET	Pr>15 MeV	0855	>1828	>12 d	>60
MET	Pr>25 MeV	0855	>1828	13.6 d	>9.62
MET	Pr>40 MeV	0855	>1828	12.2 d	>2.68
RIOM	PCA	11	23d01/24d00	5.5 d	1.3/1.3
RIOM	PCA	28d14	29d07/1d08/3d06	5 d	0.6/0.7/0.7

Source: □ active region AR 5629 is on the invisible hemisphere
a number of X-ray and type II bursts, no flare reported

▲ SC 23d0047, 23d1427, 27d1337

250	1989	September 3	20			010
MET	Pr>5 MeV	<4d0223	<4d0446	>4 d	>68	
MET	Pr>15 MeV	<4d0223	<4d0406	>1.3 d	>2.9	
RIOM	PCA	20	4d05/4d17	4.5 d	1.1/0.8	
Source:	☀ flare	1428	S17 E19 1B	AR 5669		
	☊ flare	4d0857	S18 E20 1B	AR 5669		
	▲ SC	4d0027				

251	1989	September 12	06	120	
MET	Pr>5 MeV	<1555	<13d1059	>3.4 d	>62
MET	Pr>15 MeV	<1555	<13d1059	>3.3 d	>8.7
MET	Pr>25 MeV	<1647	>13d1059	1.4 d	>1
MET	Pr>40 MeV	<1647	>13d0312	1 d	>0.81
RIOM	PCA	06	3d11	3.1 d	1.5
Source: ⊙ X-ray LDE burst M5.3 0435-1057					
⊘ flare 13d0329 N17 E10 2N AR 5687					
▲ SC 1228, 5d0047					

252		1989	September 16	05	010
MET	Pr>5 MeV	>02	<1152	>2.5 d	>6.91
MET	Pr>15 MeV	>02	<1152	>14 h	>1.25
MET	Pr>25 MeV	>02	<1152	>8 h	>0.2
RIOM	PCA	05	08	4 h	0.45
Source: ☉ flare 15d2230 N23 W24 1F AR 5690					
▲ SC 17d0743					

253		1989	September 29		12	334
MET	Pr>5 MeV	1123	2336		>20 d	6600
MET	Pr>15 MeV	1123	2336		18.5 d	3600
MET	Pr>25 MeV	1123	2336		16.2 d	1200
MET	Pr>40 MeV	1123	2336		11.5 d	730
MET	Pr>90 MeV	1215	1824		8.5 d	270
MET	Pr>600 MeV	1215	1454-1547		2.4 d	2.6
IMP8	Pr13.7-25.2 MeV	12	24		>15 d	90
BAL	Pr>300 MeV		<1600		>3 d	20
BAL	Pr>500 MeV		<1600		>3 d	8
BAL	Pr>1600 MeV		1300		12 h	0.85
NM	Pr>1 GV	1146V2	1302-1304		36 h	374.4% THUL
RIOM	PCA	12	>20/30d22/ 1d05/1d12		5.5 d	>8/8.6/ 8.2/2.8
RIOM	PCA	6d00	6d05		1.3 d	0.7
Source: ■ flare <1000 S32 W90 2N AR 5698						
activity of the region AR 5698 on the invisible hemisphere						
▲ SC 30d1716, 2d0339						

254		1989 October 19		14	443
MET	Pr>5 MeV	1350	>2049	>3.3 d	>6800
		/20d1223	/20d(1503-1739)		/17500
MET	Pr>15 MeV	1350/20d1223	>2049/20d1553		>2800/17000
MET	Pr>25 MeV	1350/20d1223	>2049/20d1553		>730/4500
MET	Pr>40 MeV	1350/20d1223	1958/20d1553		440/2600
MET	Pr>90 MeV	1350/20d1223	1958/20d1553		170/310
MET	Pr>600 MeV	1350/20d1317	1958/20d1503		2.9/6.8
BAL	Pr>200 MeV	<1700	(1930-2340)/	>3 d	20/
			20d(1700-1800)		10
BAL	Pr>300 MeV	<1700	(1930-2340)/	>3 d	10/
			20d(1700-1800)		2.5
BAL	Pr>500 MeV	<1700	(1930-2340)/	>3 d	1.5/
			20d(1700-1800)		0.4
NM	Pr>1 GV	1310V5	1510-1515	27 h	53% SNAE
RIOM	PCA	<15	<20d02/20d(14-20)	>3 d	7.8/>15

Source: ● flare 1229 S25 E09 3B AR 5747
▲ SC 18d0050, 20d0916

255		1989 October 22		18	334
MET	Pr>5 MeV	1824	23d(>0801-0946)	>2 d	>8800
MET	Pr>15 MeV	1814	>23d0801	>2 d	>5100
MET	Pr>25 MeV	1814	23d(>0708-0853)	>2 d	>1200
MET	Pr>40 MeV	1814	>23d0708	>2 d	>660
MET	Pr>90 MeV	1814	>2140	>2 d	>140
MET	Pr>600 MeV	1814	1907	2 d	3
BAL	Pr>200 MeV	1820	<2130	2 d	10
BAL	Pr>300 MeV	1820	<2130	2 d	2.5
BAL	Pr>500 MeV	1820	<2130	2 d	0.5
NM	Pr>1 GV	1758V2	1806-1808	5 h	193.1% MCMD
RIOM	PCA	<18	23d09/24d02	>2 d	11/>5.8

Source: ● flare 1708 S27 W32 1N AR 5747

256		1989 October 24		18	334
MET	Pr>5 MeV	1849	>2215	>4.1 d	>6800
MET	Pr>15 MeV	1849	>2215	>4 d	>3300
MET	Pr>25 MeV	1849	>2215	>4 d	>800
MET	Pr>40 MeV	1849	>2215	>4 d	>430
MET	Pr>90 MeV	1849	>2215	>4 d	>140
MET	Pr>600 MeV	1849	>2215	>4 d	>4.2
BAL	Pr>200 MeV	1815	24d2130-25d0230	3 d	20
BAL	Pr>300 MeV	1815	24d2130-25d0230	3 d	10
BAL	Pr>500 MeV	1815	24d2130-25d0230	3 d	7
NM	Pr>1 GV	1825V5	2015-2020	30 h	122.7% TERA
RIOM	PCA	<18	25d02/25d10	>4.2 d	>9/7

Source: ● flare 1738 S29 W57 2N AR 5747
▲ SC 26d1427

257	1989	October 29		04	110
MET	Pr>5 MeV	<0525	0803	>10.3 d	318
MET	Pr>15 MeV	<0525	0803	>10.3 d	55.7
MET	Pr>25 MeV	<0525	0948	>10. d	13
MET	Pr>40 MeV	<0525	0855	>10.3 d	8.1
MET	Pr>90 MeV	<0525	0855	>10.3 d	2.2
MET	Pr>600 MeV	<0525	0855	2.5 d	0.07
RIOM	PCA	04	08	0.9 d	0.8
RIOM	PCA	<01d12	2d02	>8.5 d	0.5

Source: □ active region AR 5747 beyond W-limb
X-ray burst M4.0 0221-0617, and
type II burst 0203-0214, no flare reported
▲ SC 2d0036

258	1989	November 9		<00	010
MET	Pr>5 MeV	<0331	0809-0906	1.2 d	55
MET	Pr>15 MeV	<0331	0522	1.5 h	1.15
RIOM	PCA	<00	10	>1 d	1

Source: ☉ flare 8d1856 N20 W55 2B AR 5769
☉ flare 8d1818 N14 E12 1N AR 5782
▲ SC 0054

259	1989	November 15		07	113
MET	Pr>5 MeV	0725	0819	2.5 d	253
MET	Pr>15 MeV	0725	1010	2.4 d	56.7
MET	Pr>25 MeV	0725	0917-1010	2.0 d	22.1
MET	Pr>30 MeV	0725	1010	2.0 d	20.8
MET	Pr>40 MeV	0725	0917-1010	1.4 d	16.1
MET	Pr>90 MeV	0725	0917	1.3 d	4.3
MET	Pr>600 MeV	0725	0917	12 h	0.12
BAL	Pr>100 MeV	<0730	0800	3 d	7
BAL	Pr>200 MeV	<0730	0800	3 d	2
BAL	Pr>300 MeV	<0730	0800	3 d	0.9
BAL	Pr>500 MeV	<0730	0800	3 d	0.35
NM	Pr>1 GV	0705V5	0710-1715	1.3 h	12.5% TERA
RIOM	PCA	<07	1509	2.8 d	1.4

Source: ☼ flare 0638 N11 W28 2B AR 5786
▲ SC 17d0925

260	1989	November 20		03	000
GOES7	Pr>10 MeV	03	05-06	20 h	1.6
GOES7	Pr>30 MeV	03	06-08	20 h	0.036
GOES7	Pr>50 MeV	03	05-06	15 h	0.0051

Source: ☉ flare 0033 S27 W33 SN AR 5793
activity of the region AR 5793 during November 16-23, 1989

261	1989 November 26				21	120
MET	Pr>5 MeV	2043	28d1205	3.6 d	511	
MET	Pr>15 MeV	2043	28d1205	>1.5 d	29	
MET	Pr>25 MeV	28d0730	28d1205	7.5 h	2.16	
MET	Pr>30 MeV	28d0824	28d1205	7 h	0.07	
RIOM	PCA	27d08	28d10	2.5 d	2.5	

Source: ○ flare 1749 N25 W03 2B AR 5800
 ○ flare 27d1702 N21 W63 1N AR 5799
 ▲ SC 27d2139, 28d0742

262	1989 November 30				12	330
MET	Pr>5 MeV	1228	1d1211	8.6 d	9700	
MET	Pr>15 MeV	1228	1d1211	4.4 d	1000	
MET	Pr>25 MeV	1657	1d1022	2.2 d	96	
MET	Pr>30 MeV	1657	1d1022	2.1 d	62	
MET	Pr>40 MeV	1657	1d1022	2 d	20	
MET	Pr>90 MeV	1750	1d1022	1.2 d	0.48	
MET	Pr>600 MeV	2223	1d1022	0.9 d	0.12	
RIOM	PCA	14	21/1d13	4.5 d	3.9/9.6	

Source: ● flare 1145 N25 W52 2N AR 5800
 ▲ SC 1d1749

263	1990 February 3				02	(1)10
MET	Pr>5 MeV	0147	0240	1.8 d	160	
MET	Pr>15 MeV	0147	0337	22 h	13	
MET	Pr>25 MeV	0147	0337	8 h	1.32	
MET	Pr>30 MeV	0147	0337	7 h	1.27	
RIOM	PCA		03	0.5 d	0.8	

Source: ● flare 0108 S12 W79 1N AR 5917

264	1990 March 19				06	230
MET	Pr>5 MeV	0503	1749	2.9 d	1400	
MET	Pr>15 MeV	0652	1749-1847	2.5 d	146	
MET	Pr>25 MeV	0652	1749	1.8 d	12	
MET	Pr>30 MeV	0652	1749	1.4 d	6.37	
MET	Pr>40 MeV	0652	1749	1.2 d	1.45	
MET	Pr>90 MeV	0652	1655	1.1 d	0.025	
RIOM	PCA	06	10/19	2.7 d	3/6	

Source: ● flare 0438 N33 W39 1N AR 5969
 0334 N31 W40 SF AR 5969
 ▲ SC 20d2243

265	1990 March 28				18	010
MET	Pr>5 MeV	1807	29d1025	1.7 d	380	
MET	Pr>15 MeV	1807	29d1025	18 h	0.65	
RIOM	PCA	<29d02	29d10	0.5 d	1.2	

Source: ○ flare 0727 S05 W35 2N AR 5988
 ○ flare 29d0827 S32 W60 SF AR 5983
 ▲ SC 30d0720

266 1990 April 7 21 010

MET	Pr>5 MeV	6d1630	2333	4.9 d	78.2
MET	Pr>15 MeV	2051	8d0121	2.5 d	1.5
RIOM	PCA	<12	8d06	2.7 d	1.4

Source: ○ flare 6d0618 N25 E50 1N AR 6007
 ○ flare 1511 N31 E62 SF AR 6012
 ○ flare 8d0344 N24 E28 2N AR 6007
 ▲ SC 9d0843

267 1990 April 11 15 (0)10

MET	Pr>5 MeV	1506	12d0541	21 h	61
MET	Pr>15 MeV	1755	12d0352	16 h	0.07
RIOM	PCA	<23	12d00/12d05	0.5 d	0.6/1.2

Source: ○ flare 10d1144 N24 W04 1N AR 6007
 type II burst 0748-0758, no flare reported
 ▲ SC 12d0326

268 1990 April 15 15 110

MET	Pr>5 MeV	1559	17d1326	9.9 d	101
MET	Pr>15 MeV	1456	17d1306	5.7 d	6.64
MET	Pr>25 MeV	1838	17d1133	>3 d	0.14
RIOM	PCA	16d01	17d06	8 d	1.2

Source: ● flare 0230 N32 E54 2B AR 6022
 ○ flare 16d0630 S12 E46 2B AR 6021
 ▲ SC 17d0719, 20d1801

269 1990 April 28 01 120

MET	Pr>5 MeV	0117	2030	2 d	323
MET	Pr>15 MeV	0117	1842	1.5 d	37
MET	Pr>25 MeV	1022	1842	0.9 d	4.6
MET	Pr>30 MeV	1309	1842	18 h	2.7
MET	Pr>40 MeV	1403	1842	10 h	0.73
RIOM	PCA	04	14/29d02	2 d	0.2/1.9

Source: □ prolonged type II burst 0024-0050, possibly activity behind W-limb
 active region AR 6022 ~2 days behind W-limb

270 1990 May 7 06 010

MET	Pr>5 MeV	0603	2325		38.8
MET	Pr>15 MeV	0603	2325		3.79
MET	Pr>25 MeV	0603	2325		0.09
MET	Pr>40 MeV	<1230	2325		0.03
RIOM	PCA	11	8d01	1.8 d	0.5

Source: activity of region AR 6063 beyond E-limb
 ▲ SC 9d1843

271		1990 May 21		23	223
MET	Pr>5 MeV	2310	22d0627	>2.6 d	1400
MET	Pr>15 MeV	2310	22d0627	>2.6 d	280
MET	Pr>25 MeV	2310	22d0627	>2.6 d	140
MET	Pr>30 MeV	2310	22d0627	>2.6 d	110
MET	Pr>40 MeV	2310	22d0627	>2.6 d	71
MET	Pr>90 MeV	2310	22d0627	>2.6 d	12
MET	Pr>600 MeV	2310	22d(0246-0343)	26 h	0.33
BAL	Pr>150 MeV	<22d0330	22d(0330-0630)	>1.5 d	5.6
BAL	Pr>200 MeV	<22d0330	22d(0330-0630)	>1.5 d	2.5
BAL	Pr>300 MeV	<22d0330	22d(0330-0630)	>1.5 d	0.9
BAL	Pr>500 MeV	<22d0330	22d(0330-0630)	>1.5 d	0.2
NM	Pr>1 GV	2234V2	2246 2248	7 h	23.6% THUL
RIOM	PCA	22d00	22d07/23d01	>2.8 d	3.5/0.9

Source: ● flare 2212 N34 W37 2B AR 6063
 ☉ flare 22d0004 S15 W43 1N AR 6064
 ▲ SC 1021

272		1990 May 24		21	223
MET	Pr>5 MeV	2128	25d0157	>1.7 d	1200
MET	Pr>15 MeV	2128	25d0157	>1.7 d	260
MET	Pr>25 MeV	2128	25d0157	>1.7 d	110
MET	Pr>40 MeV	2128	25d0157	>1.7 d	78
MET	Pr>90 MeV	2128	25d0157	>1.7 d	18
MET	Pr>600 MeV	2128	25d0157	>1.7 d	0.62
BAL	Pr>100 MeV	<25d06	25d(06-07)	>1.5 d	5
BAL	Pr>200 MeV	<25d06	25d(06-07)	>1.5 d	1.7
BAL	Pr>300 MeV	<25d06	25d(06-07)	>1.5 d	0.9
BAL	Pr>400 MeV	<25d06	25d(06-07)	>1.5 d	0.4
NM	Pr>1 GV	2055V5	2115-2120	15 h	31.3% INVK
RIOM	PCA	<22	25d03/26d03/ 26d10/26d16	>1 d	2.2/1.2/ 1.3/1.7

Source: ● flare 2046 N36 W76 1B AR 6063
 ▲ SC 25d0510, 26d2037

273		1990 May 26		22	223
MET	Pr>5 MeV	<2243	27d0124	>1.2 d	930
MET	Pr>15 MeV	<2243	27d(0124-0221)	>1.2 d	200
MET	Pr>25 MeV	<2243	27d(0124-0221)	>1.2 d	80
MET	Pr>40 MeV	<2243	27d0221	>1.2 d	53
MET	Pr>90 MeV	<2243	27d0124	>1.2 d	14
MET	Pr>600 MeV	<2243	27d(0032-0124)	0.84 d	0.41
BAL	Pr>200 MeV		27d0400	1.5 d	1.7
BAL	Pr>300 MeV		27d0400	1.5 d	0.7

BAL	Pr>400 MeV		27d0400	1.5 d	0.4
NM	Pr>1 GV	2145	2206-2207	4.5 h	12% MWSW
RIOM	PCA	<21	27d04	>1.3 d	1.7

Source: ■ active region AR 6063 behind W-limb
X-ray burst X1.4 2045-2133

274		1990 May 28		06	212
MET	Pr>5 MeV	>0638	2022-2359		320
MET	Pr>15 MeV	0638	2022		86
MET	Pr>25 MeV	0638	1645-2030		28
MET	Pr>40 MeV	0638	1645-1833		20
MET	Pr>90 MeV	0638	1456-1845		5
MET	Pr>600 MeV	0638	1456		0.19
BAL	Pr>150 MeV	<0730	0730-1050	3 d	1.2
BAL	Pr>200 MeV	<0730	0730-1050	3 d	0.6
BAL	Pr>300 MeV	<0730	0730-1050	3 d	0.3
BAL	Pr>450 MeV	<0730	0730-1050	3 d	0.15
NM	Pr>1 GV	0535V5	1130-1135	13 h	6% OULU
RIOM	PCA	<08	19	3 d	1.1

Source: □ active region AR 6063 2.5 days behind W-limb
type II burst 0430-0452 and type IV burst 0428-0457, no flare reported
▲ SC 30d0904

275		1990 June 12		08	1X0
MET	Pr>5 MeV	<08	1802	2.4 d	124
MET	Pr>15 MeV	08	1951	1.3 d	6.7
MET	Pr>25 MeV	08	1521	1.2 d	0.12
MET	Pr>30 MeV	08	1333	1.17	0.11
MET	Pr>40 MeV	08	1333	6 h	0.07

Source: * flare 0429 N10 W32 2B AR 6089
▲ SC 0820, 13d1415, 14d0310

276		1990 July 25		17	1X0
MET	Pr>5 MeV	1703	26d(1647-1739)	>5 d	37
MET	Pr>15 MeV	<26d0116	26d0840	>2.8 d	9.5
MET	Pr>25 MeV	<26d0116	26d0650	1.9 d	1.6
MET	Pr>40 MeV	<26d0116	26d0459	1.3 d	1.1
MET	Pr>90 MeV	<26d0116	26d0402	1.2 d	0.09

Source: * flare 2221 S14 E56 2N AR 6174
▲ SC 28d0108, 28d0331

277		1990 July 30		20	2X0
MET	Pr>5 MeV	2205	1d(1902-2229)	9.8 d	449
MET	Pr>15 MeV	2026	1d(2046)	4.8 d	80
MET	Pr>25 MeV	31d0233	1d(2046)	3 d	8
MET	Pr>30 MeV	31d0139	1d(1719-2046)	3 d	7.6
MET	Pr>40 MeV	31d0139	1d(2046)	2.2 d	1.57

Source: * flare 0632 N18 E42 2N AR 6180
X-ray burst C7.0 1d(0923-0953)
▲ SC 1d0741

278		1990 August 11		16	0X0
MET	Pr>5 MeV	16	13d1640	>3.9 d	14
MET	Pr>15 MeV	13d0108	13d1640	1.4 d	0.54
MET	Pr>25 MeV	13d0108	13d1640	1.3 d	0.09
MET	Pr>30 MeV	13d0108	13d1640	1 d	0.05
Source: ☉ flare 10d1743 N19 E73 2B AR 6203					
☉ flare 13d0921 N14 E18 1F AR 6199					
☉ flare 13d1312 N15 E09 1N AR 6197					
▲ SC 13d1027					

279		1990 October 23		09	0X0
MET	Pr>5 MeV	0845	1541-1636	2.8 d	8.2
MET	Pr>15 MeV	1028	1636-1727	1.5 d	1.3
MET	Pr>25 MeV	1118	1727	21 h	0.33
MET	Pr>30 MeV	1118	1727	21 h	0.25
MET	Pr>40 MeV	1118	1727	17 h	0.24
MET	Pr>90 MeV	1118	1727	15 h	0.03
Source: ○ flare 0804 S37 E11 SN AR 6327A					
○ flare 0829 N19 E27 SN AR 6331A					

280		1990 November 11		>00	0X0
MET	Pr>5 MeV	>10d23	<1511	>23 h	>2.7
MET	Pr>15 MeV	>10d23	<1232-1325	>14 h	>0.73
MET	Pr>25 MeV	>10d23	<1139	>12 h	>0.11
MET	Pr>40 MeV	>10d23	<1139	>4 h	>0.07
Source: ○ flare 10d1154 N06 E17 2B AR 6361					
○ flare 0551 N05 E07 SN AR 6359B					

281		1990 December 23		11	0X0
MET	Pr>5 MeV	1054	1148	>1.4	16
MET	Pr>15 MeV	1054	1148	13 h	3.2
MET	Pr>25 MeV	1054	1148	12 h	0.63
MET	Pr>30 MeV	1054	1148	12 h	0.60
MET	Pr>40 MeV	1054	1148	6 h	0.44
MET	Pr>90 MeV	1054	1148	5 h	0.03
Source: * flare 0943 N12 W70 2B AR 6412					

282		1990 December 24		16	0X0
MET	Pr>5 MeV	1626	2318	1.8	7.6
MET	Pr>15 MeV	1626	2135	1.6	2.7
MET	Pr>25 MeV	1718	2135	1.1	0.66
MET	Pr>30 MeV	1718	2135	1.1	0.61

MET	Pr>40 MeV	1718	2135	0.9	0.35
MET	Pr>90 MeV	1718	1809	16 h	0.05

Source: \bullet flare 1533 N10 W80 1B AR 6412
 \emptyset flare <1322 S24 E47 1F AR 6420
no flare patrol 1331-1417

283		1991	January 25	19	0X0
MET	Pr>5 MeV	1423	26d2223	>5.6 d	11
MET	Pr>15 MeV	2116	26d2223	>5.1	2.6
MET	Pr>25 MeV	2116	26d2223	4.1	0.75
MET	Pr>40 MeV	1932	26d(2223-2400)	3.3	0.59
MET	Pr>90 MeV	1932	26d2039	2.8	0.06

Source: \bullet flare 0623 S12 E90 1B AR 6471
0630 S16 E78 SF AR 6475
 \emptyset flare 27d1440 S13 E59 1B AR 6471

284		1991	January 31	03	2X0
MET	Pr>5 MeV	0640	2026	6	112
MET	Pr>15 MeV	0400	1611	1.8	41
MET	Pr>25 MeV	0400	1611	1.6 d	3.74
MET	Pr>40 MeV	0308	1611	1.2 d	0.70

Source: \bullet flare 0157 S17 W35 2B AR 6462
 \blacktriangle SC 1d1842

285		1991	February 8	09	0X0
MET	Pr>5 MeV	0908	>1051	>2 d	>19
MET	Pr>15 MeV	0908	>1051	>2 d	>2.4
MET	Pr>25 MeV	0908	>1051	19 h	>0.41
MET	Pr>30 MeV	0908	>1051	19 h	>0.33
MET	Pr>40 MeV	0908	>1051	<18 h	>0.22

Source: \odot flare 0524 N14 E34 1F AR 6487

286		1991	February 25	09	0X0
MET	Pr>5 MeV	0856	1409	5 d	25
MET	Pr>15 MeV	0856	1226	2 d	3.8
MET	Pr>25 MeV	0856	1041	15 h	0.39
MET	Pr>30 MeV	0856	1041	15 h	0.3

Source: \bullet flare 0809 S15 W82 2N AR 6497

287		1991	March 12	17	0X0
MET	Pr>5 MeV	0808	13d2119	8.4 d	27
MET	Pr>15 MeV	1829	13d1519	5 d	2.7
MET	Pr>25 MeV	1646	13d1103	2.1 d	0.46

Source: \bullet flare 1228 S08 E58 1N AR 6545
 \blacktriangle SC 12d0453, 16d1559

288	1991	March 22	24	4X0
MET	Pr>5 MeV	1845	24d(0440-0535)	>11.4 d >97000
MET	Pr>15 MeV	2359	24d0439	>11.4 d >67000
MET	Pr>25 MeV	23d0052	24d0439	>11 d 8100
MET	Pr>40 MeV	23d0052	24d0439	>7.6 d 3400
MET	Pr>90 MeV	23d0052	24d0439	>1.5 d 51
MET	Pr>600 MeV	23d0052/	24d0439	>1.4 d 0.96
BAL	Pr>150 MeV	<23d1230	24d0430	>1 d 7.3

Source: ● flare 2243 S26 E28 3B AR 6555
 Ø flare 23d0219 S21 E13 2B AR 6555
 ▲ SC 24d0147, 24d0341

289	1991	April 3	08	1X0
MET	Pr>5 MeV	0831	4d0521	>13 d 127
MET	Pr>15 MeV	0831	4d0521	5.6 d 9.84
MET	Pr>25 MeV	1831	4d0521	4.2 d 1.18
MET	Pr>30 MeV	1831	4d0426	3.1 d 1.88
MET	Pr>40 MeV	0831	4d0335	1.5 d 0.32

Source: ● flare 2d2251 N15 E02 2N AR 6562
 ▲ SC 4d1121

290	1991	April 22	12	0X0
MET	Pr>5 MeV	0930	23d0111	3.9 d 16
MET	Pr>15 MeV	1202	23d0111	1.6 d 1.67
MET	Pr>25 MeV	1202	23d0204	1.4 d 0.29
MET	Pr>30 MeV	1202	23d0111	1.3 d 0.25

Source: unknown, enhanced X-ray at the level C3.0 for a long time (02-22)
 ▲ SC 23d1041, 24d2045

291	1991	May 13	03	2X0
MET	Pr>5 MeV	0245	1006	2.8 d 930
MET	Pr>15 MeV	0245	0624-0815	1.7 d 127
MET	Pr>25 MeV	0245	0434-0531	21 h 34.7
MET	Pr>30 MeV	0245	0434	20 h 41.4
MET	Pr>40 MeV	0245	0434	20 h 23.6
MET	Pr>90 MeV	0245	0342	15 h 4.3
MET	Pr>600 MeV	0245	0342	7 h 0.07

Source: ■ flare 0135 S07 W90 SN AR 6615
 ▲ SC 0857

292	1991	May 18	16	0X0
MET	Pr>5 MeV	1606	19d0824	>3.8 d 32
MET	Pr>15 MeV	1606	19d0824	>2.0 d 4.3
MET	Pr>25 MeV	1606	19d0539	1.8 d 0.11

Source: ■ flare r0506 N18 W90 2N
 L0530 N31 W87 2N AR 6619
 ▲ SC 21d1227

293		1991 May 22		08	0X0
MET	Pr>5 MeV	0925	1211-23d1725	>7.4 d	17.5
MET	Pr>15 MeV	0829	1211-23d1632	1.4 d	1.5

Source: unknown
☐ activity of the region AR6619/6659 on the invisible hemisphere
 ▲ SC 22d0018

294		1991 May 31		10	1X0
MET	Pr>5 MeV	1036	1607/1d0106	>3 d	55/79
MET	Pr>15 MeV	1036	1607/1d0106	>3 d	1.16/4.9

Source: ◇ activity of the regions AR 6652, 6654 to the east of CM and near CM
 Ø flare 0346 S08 E13 2N AR 6652
 Ø flare r0825 N07 E20 1B AR 6654
 L0830 N09 E23 1N AR 6654A
☐ activity of the region AR 6619/6659 on the invisible hemisphere
 ▲ SC 31d1039

295		1991 June 2		16	1X0
MET	Pr>5 MeV	1627	2152	>2 d	61
MET	Pr>15 MeV	1534	2152	>2 d	3.9
MET	Pr>25 MeV	1534	2341	>2 d	0.08

Source: ◇ activity of the region AR 6652 to the west of CM
 Ø flare 1350 S08 W20 2B AR 6652
☐ activity of the region AR 6659 near E-limb
 Ø flare 1d1509 N22 E90 1F AR 6659

296		1991 June 4		05	2X0
MET	Pr>5 MeV	0509	7d0603-8d1649	>6.8 d	1100
MET	Pr>15 MeV	0509	7d04-8d1649	>6.8 d	250
MET	Pr>25 MeV	0509	7d0652-8d1649	>6.8 d	62
MET	Pr>30 MeV	0509	7d0652-8d1649	>6.8 d	49
MET	Pr>40 MeV	0509	7d0652-8d1649	>6.8 d	30
MET	Pr>90 MeV	0509	7d0652-8d1558	6.7 d	3.35
BAL	Pr>150 MeV	<6d0745	7d(1730-2135)	4 d	1.1
BAL	Pr>200 MeV	<6d0745	7d(1730-2135)	4 d	0.12

Source: ◆ high flare activity in the region AR 6659
 Ø flare 0334 N34 E75 2N AR 6659
 Ø flare 6d0054 N32 E45 3B AR 6659
 Ø flare 7d0013 N29 E24 3N AR 6659
 ▲ SC 0337, 7d2228, 9d0040, 10d1716

297	1991	June 11	02	3X2
MET	Pr>5 MeV	0021	0531/1559	>4.3 d 3300/78000
MET	Pr>15 MeV	0112	0531/1559	>4.3 d 860/3600
MET	Pr>25 MeV	0112	0531/1413	>4.3 d 260/840
MET	Pr>30 MeV	0112	0531/(1413-1559)	>4.3 d 140/620
MET	Pr>40 MeV	0112	0531/1413	>4.3 d 140/360
MET	Pr>90 MeV	0204	0531/(1413-1508)	>4.3 d 21.8/35.2
MET	Pr>600 MeV	0204	0531/(1413-1508)	>3.3 d 0.51/0.55
BAL	Pr>150 MeV	<0640	0800-0900	>1 d. 8.3
BAL	Pr>200 MeV	<0640	0800-0900	>1 d. 2.0
BAL	Pr>300 MeV	<0640	0800-0900	>1 d. 0.4
NM	Pr>1 GV	0240V5	0345-0350	7 h 8.2% OULU

Source: ☀ flare 0105 N32 W15 2B AR 6659
 ☊ flare <2005 N28 W41 1B AR 6659
 ▲ SC 12d1012

298	1991	June 15	08	3X3
MET	Pr>5 MeV	0821	10	>11.6 d 4800
MET	Pr>15 MeV	0821	09	10.8 d 880
MET	Pr>25 MeV	0821	12	8.6 d 240
MET	Pr>30 MeV	0821	09	8.6 d 230
MET	Pr>40 MeV	0821	09	4.1 d 150
MET	Pr>90 MeV	0733	10	2.7 d 88
BAL	Pr>100 MeV	<2230	16d(0200-0300)	>1 d 9
BAL	Pr>200 MeV	<2230	16d(0200-0300)	>1 d 0.4
NM	Pr>1 GV	0850V5	0920-0925	14 h 23.3% APAT



Source: ☀ flare 0633 N36 W70 3B AR 6659
 ▲ SC 17d1019, 17d1922

299	1991	June 29	03	1X0
MET	Pr>5 MeV	0307	30d1302	>2.7 d 205
MET	Pr>15 MeV	0307	30d1302	>2.7 d 25.5
MET	Pr>25 MeV	0307	30d1302	>2.7 d 5
MET	Pr>30 MeV	<0820	30d1302	>2.7 d 4.8
MET	Pr>40 MeV	<0820	30d1302	>2.5 d 2
MET	Pr>90 MeV	<0820	30d1026	>2.5 d 0.2



Source: ◊ activity near CM
 ○ flare 28d0452 S08 E08 SN AR 6693
 □ active region AR 6703 1-2 days before E-limb
 ▲ SC 30d0116

300	1991	July 1	<18	2X0
MET	Pr>5 MeV	<1835	20-22	>5.5 d 525
MET	Pr>15 MeV	<1835	20-22	>5.5 d 55.2
MET	Pr>25 MeV	<1835	2018	>5.5 d 9.5
MET	Pr>30 MeV	<1835	2018	>5.5 d 8.8




MET	Pr>40 MeV	<1835	2018	>4.2 d	2.9
MET	Pr>90 MeV	<1835	2018	4.2 d	0.1

Source:  flare 0126 N28 E78 1N AR 6703
 SC 2d0811




301	1991	July 7		07	3X0
MET	Pr>5 MeV	0717	8d0644/8d1530	>3.6 d	5300/4100
MET	Pr>15 MeV	0717	8d0644/8d1530	>3.5 d	390/180
MET	Pr>25 MeV	0717	8d0644/8d1530	2.3 d	27/11
MET	Pr>40 MeV	0717	8d0644/8d1530	1.7 d	2.2/0.85

Source:  flare 0120 N28 E00 3B AR 6703
 SC 6d1528, 8d1636



302	1991	July 10		20	1X0
MET	Pr>5 MeV	2116	<11d0646	>3.3 d	>155
MET	Pr>15 MeV	1933	<11d0646	>1.7 d	>9
MET	Pr>25 MeV	1933	<11d0646	>1.1 d	>0.5
MET	Pr>30 MeV	1933	<11d0646	>1.1 d	>0.8

Source:  flare 1159 S22 E32 2N AR 6718
 flare 11d0835 N23 W52 3B AR 6711
 SC 12d0924, 13d0600

303	1991	August 3		03	(0)X0
MET	Pr>5 MeV	0317	0556	2 d	20
MET	Pr>15 MeV	0317	0556	17 h	0.9
MET	Pr>25 MeV	0317	0556	13	0.07

Source:  flare 0122 N25 E06 1B AR 6757
 flare 0324 N19 W02 1F AR 6757
 SC 2d0533

304	1991	August 25		20	2X0
MET	Pr>5 MeV	1931	27d0100/27d2056	7.7 d	130/822
MET	Pr>15 MeV	2348	27d0100/27d1823	4 d	6.8/44
MET	Pr>25 MeV	2348	27d0100/27d1823	3 d	0.7/5.5
MET	Pr>30 MeV	2348	27d0100/27d1823	3.5 d	0.7/5.5
MET	Pr>40 MeV	27d1640	/27d1823	7.3 h	/0.9

Source:  flare 0026 N23 E76 2B AR 6805
 SC 27d1515, 29d2228

305	1991	September 30		02	0X0
MET	Pr>5 MeV	0153	2056	4.5 d	11
MET	Pr>15 MeV	0153	2056	3.5 d	2.2
MET	Pr>25 MeV	0246	2056	2.7 d	0.44
MET	Pr>30 MeV	0246	2056	2.7 d	0.48
MET	Pr>40 MeV	0339	1823	2.6 d	0.38
MET	Pr>90 MeV	0339	1912	1.8 d	0.02

Source: * flare 29d1513 S21 E31 3B AR 6858A
 Ø flare 1533 S12 W61 1F AR 6842
 Ø flare 2113 S12 E06 SN AR 6850
 ▲ SC 1d1815

306	1991	October 28	08	1X0
MET	Pr>5 MeV	0740	1559	>2.8 d 136
MET	Pr>15 MeV	1025	1408	1.7 d 1
Source:	⊙ flare	27d0538	S13 E17 2B	AR 6891
	▲ SC	1054		

307	1991	October 30	07	1X0
MET	Pr>5 MeV	0721	1226	4.2 d 136
MET	Pr>15 MeV	0721	0949	>1.6 d 62.3
MET	Pr>25 MeV	0721	0949	>1.6 d 32.6
MET	Pr>30 MeV	0721	0949	>1.6 d 24.4
MET	Pr>40 MeV	0721	0949	>1.6 d 18.2
MET	Pr>90 MeV	0721	0949	>1.6 d 1
Source:	* flare	0610	S09 W26 2N	AR 6891

308	1991	November 16	00	0X0
MET	Pr>5 MeV	0024	0440-1223	>1.3 d 4.2
MET	Pr>15 MeV	0024	0440-1223	>1.3 d 1.5
MET	Pr>2 MeV 5	0024	0440-1223	1 d 0.45
MET	Pr>30 MeV	0024	0440-1223	23 h 0.38
MET	Pr>40 MeV	0024	0440-1223	22 h 0.27
MET	Pr>90 MeV	0024	0258-1223	16 h 0.06
Source:	* flare	15d2234	S14 W19 2B	AR 6919
	Ø flare	0434	S14 W18 1N	AR 6919

309	1991	November 17	07	0X0
MET	Pr>5 MeV	0641	1242	3.3 d 4.4
MET	Pr>15 MeV	0641	1242	1.5 d 1.2
MET	Pr>25 MeV	0641	1427	1.1 d 0.4
MET	Pr>30 MeV	0641	1242	1 d 0.3
MET	Pr>40 MeV	0641	1427	16 h 0.08
Source:	⊙ flare	0154	S14 W34 1N	AR 6919

310	1991	December 28	23	0X0
MET	Pr>5 MeV	2237	29d0026	2.9 d 35
MET	Pr>15 MeV	2237	29d0026	1.2 d 1.6
Source:	* flare	2108	S15 W47 SN	AR 6982
	▲ SC	31d1426		

311		1992 January 4		05	0X0
MET	Pr >5 MeV	0506	0506/1038	2.1 d	3.65/4.93
MET	Pr >15 MeV	0506	0506/1038	1.3 d	1.34/1.1
MET	Pr >25 MeV	0506	0506	12 h	0.068
MET	Pr >30 MeV	0506	0506	12 h	0.056
MET	Pr >40 MeV	0506	0506	10 h	0.049

Source: ♦ activity of the region AR 6993
 ⊙ flare 3d1625 S10 E34 SF AR 6993
 ◇ activity of the regions AR 6985, 6988 on the western hemisphere

312		1992 February 7		<05	1X0
MET	Pr >5 MeV	<0511	1227	>2.2 d	299
MET	Pr >15 MeV	<0511	1227	1.3 d	5.7

Source: ○ flare 6d0928 S13 W09 2B AR 7042
 ○ flare 1140 S21 W53 2B AR 7035
 ▲ SC 8d1428

313		1992 March 7		16	0X0
MET	Pr >5 MeV	1407	8d0117	7.7 d	18
MET	Pr >15 MeV	1548	8d(0541-0635)	5.8 d	7.26
MET	Pr >25 MeV	1548	8d0303	4.1 d	2.36
MET	Pr >30 MeV	1548	8d0303	4.1 d	1.99
MET	Pr >40 MeV	1548	8d0303	4.0 d	1.88

Source: ○ prolonged X-ray burst at the level C2.0 during 08-18
 type II/IV bursts 0838-1015

314		1992 March 15		07	0X0
MET	Pr >5 MeV	0658	1028	>22 h	7.83
MET	Pr >15 MeV	0658	1028	>22 h	3.04
MET	Pr >25 MeV	0658	1028	>22 h	0.76
MET	Pr >30 MeV	0658	1028	>22 h	0.83
MET	Pr >40 MeV	0658	1118	>22 h	0.73
MET	Pr >90 MeV	0658	1023	>19 h	0.10

Source: ● flare 0120 S15 E27 2B AR 7100

315		1992 March 16		05	0X0
MET	Pr >5 MeV	0531	0901	2.3 d	30
MET	Pr >15 MeV	0436	0901	1.3 d	4.78
MET	Pr >25 MeV	0622	0901	1.5 d	1.21
MET	Pr >30 MeV	0531	0901	1.5 d	1.13
MET	Pr >40 MeV	0717	0901	1.2 d	1.13

Source: unknown
 ▲ SC 17d0951

316		1992 April 20		22		0X0
MET	Pr >5 MeV	2256	21d0413	2.3 d	11.1	
MET	Pr >15 MeV	2256	21d0413	9 h	1.21	
MET	Pr >25 MeV	2202	21d0413	8 h	0.21	

Source: ○ flare 1855 S16 E31 1N AR 7135

317		1992 May 8		20		3X0
MET	Pr >5 MeV	1937	9d2142	8.3 d	97000	
MET	Pr >15 MeV	1937	9d2142	5.2 d	1100	
MET	Pr >25 MeV	1937	9d2142	3.2 d	93	
MET	Pr >30 MeV	2030	9d2142	>3.1 d	84	
MET	Pr >40 MeV	2030	9d2142	3.1 d	12	
MET	Pr >90 MeV	1937	9d2142	1.3 d	0.28	

Source: ● flare 1513 S25 E07 2N AR 7154
 ∅ flare 7d0635 S21 E48 2N AR 7154
 ▲ SC 9d1557, 9d1957

318		1992 May 24		<09		0X0
MET	Pr >5 MeV	<0941	1214		15.2	
MET	Pr >15 MeV	<0941	1214		0.69	

Source: ■ flare <0353 S11 W90 -/C1.1 AR 7167

319		1992 June 25		20		2X0
MET	Pr >5 MeV	<26d0032	0542	>2.2 d	1446	
MET	Pr >15 MeV	<26d0032	0542	>2.2 d	274	
MET	Pr >25 MeV	<26d0032	0542	>2.2 d	70	
MET	Pr >30 MeV	<26d0032	0542	>2.2 d	52	
MET	Pr >40 MeV	<26d0032	0512	>2.2 d	28	
MET	Pr >90 MeV	<26d0032	0032	>1.4 d	6.1	
MET	Pr >600 MeV	<26d0032	0032	>0.6 d	0.11	
NM	Pr >1 GV	2025V5	2050-2055	6 h	7% TXBY	

Source: ● flare 1749/1947 N09 W69 1B AR 7205
 ▲ SC 27d2035

320		1992 June 28		06		1X0
MET	Pr >5 MeV	0617	29d0308	7.9 d	138	
MET	Pr >15 MeV	0617	29d0308	4.0 d	14	
MET	Pr >25 MeV	0706	2343	2.5 d	2.2	
MET	Pr >30 MeV	0706	2343	1.7 d	2.3	
MET	Pr >40 MeV	0706	2343	1.7 d	0.49	

Source: ■ flare 0514 N11 W90 SN AR 7205
 X-ray burst 0213-0423 M1.1
 ▲ SC 27d2035

321		1992	October 6		<14	0X0
MET	Pr >5 MeV		<1344	<1344	>1.9 d	>31
MET	Pr >15 MeV		<1344	<1344	>23 h	>2.2
MET	Pr >25 MeV		<1344	<1344	>7 h	>0.44
MET	Pr >30 MeV		<1344	<1344	>7 h	>0.34
MET	Pr >40 MeV		<1344	<1344	>3.5 h	>0.19

Source: ○ flare 5d1506 N10 E32 1B AR 7305

322		1992	October 30		18	4X0
MET	Pr >5 MeV		1815	31d0723	>2.4 d	15000
MET	Pr >15 MeV		1815	31d0723	>2.4 d	4140
MET	Pr >25 MeV		1815	31d0448	>2.4 d	1030
MET	Pr >40 MeV		1815	31d0448	>2.4 d	407
MET	Pr >90 MeV		1815	31d0207	2.4 d	7.1
MET	Pr >600 MeV		2144	31d0353	>1.8 d	0.57

Source: ● flare 1702 S26 W63 2N AR 7321
▲ SC 1d2147

323		1992	November 2		04	3X0
MET	Pr >5 MeV		0339	0615		5630
MET	Pr >15 MeV		0339	0615		1860
MET	Pr >25 MeV		0339	0615	6.8 d	677
MET	Pr >40 MeV		0339	0615	5.4 d	433
MET	Pr >90 MeV		0339	0615	2.8 d	112
MET	Pr >600 MeV		0339	0615	1.4 d	1.38
BAL	Pr >200 MeV		<0630	0635-0725	1 d	5.1
BAL	Pr >300 MeV		<0630	0635-0725	1 d	1.1
BAL	Pr >400 MeV		<0630	0635-0725	1 d	0.4
BAL	Pr >500 MeV		<0630	0635-0725	1 d	0.16
NM	Pr >1 GV		0350-0355			3.6% GSBY

Source: ■ flare 0310 S23 W90 2B AR 7321
▲ SC 1d2147, 4d1312

324		1992	November 23		22	0X0
MET	Pr >5 MeV		2109	2254	1.4 d	14
MET	Pr >15 MeV		2203	2254	17 h	1.8
MET	Pr >25 MeV		2203	2254	15 h	0.46
MET	Pr >30 MeV		2203	2254	11 h	0.42

Source: ● flare 2018 S08 W89 SF AR 7342

325		1992	November 29		11	0X0
MET	Pr >5 MeV		1048	1320	2.3 d	23
MET	Pr >15 MeV		1048	1320	2.3 d	3.4
MET	Pr >25 MeV		1048	1232	19 h	0.6
MET	Pr >30 MeV		1048	1048	19 h	0.6
MET	Pr >40 MeV		1048	1048	9.6 h	0.35

Source: X-ray burst 0815-1032 C9.1
 Ø flare, 1230 S16 E00 1B AR 7351

326	1993	March 4	13.	1X0
MET	Pr >5 MeV	1320	1603	1.6 d 39
MET	Pr >15 MeV	1320	1603	17 h 14
MET	Pr >25 MeV	1320	1603	11 h 3.3
MET	Pr >30 MeV	1320	1510	11 h 3.0
MET	Pr >40 MeV	1320	1413	7.3 h 1.8
MET	Pr >90 MeV	1320	1413	1.7 h 0.14

Source: ● flare 1214 S13 W55 1N AR 7434

327	1993	March 6	23	0X0
MET	Pr >5 MeV	2241	7d0218/7d0844	2.9 d 8.1/16
MET	Pr >15 MeV	2241	7d0218/7d0748	17 h 2.4/2.2
MET	Pr >25 MeV	2241	7d0218	0.15
MET	Pr >30 MeV	2241	7d0030	4.3 h 0.12

Source: ● flare 1944 S04 E29 2B AR 7440

328	1993	March 12	<19	1X0
MET	Pr >5 MeV	<1907	2056	2.3 d 77
MET	Pr >15 MeV	<1907	2056	22 h 31
MET	Pr >25 MeV	<1907	2056	11 h 9.8
MET	Pr >30 MeV	<1907	2056	13 h 12
MET	Pr >40 MeV	<1907	2056	10 h 6.3
MET	Pr >90 MeV	<1907	2056	9.9 h 0.31

Source: ● flare 1703 S03 W48 3B AR 7440

329	1993	May 14	23	0X0
MET	Pr >5 MeV	2308	15d0240	1.8 d 19
MET	Pr >15 MeV	2308	15d0240	17 h 2.4
MET	Pr >25 MeV	2308	15d0146	14 h 0.71
MET	Pr >30 MeV	2308	15d0146	10 h 0.48
MET	Pr >40 MeV	2308	15d0146	8.7 h 0.44

Source: ● flare 2154 N20 W48 2N AR 7500

330	1993	June 7	15	0X0
MET	Pr >5 MeV	1440	1808	1.4 d 18
MET	Pr >15 MeV	1440	1624	1.2 d 3.9
MET	Pr >25 MeV	1440	1624	1.0 d 1.1
MET	Pr >30 MeV	1440	1624	0.76 d 1.1
MET	Pr >40 MeV	1440	1624	0.76 d 0.72
MET	Pr >90 MeV	1534	1624	2.06 h 0.04

Source: ● flare 1354 S10 W30 2B AR 7518

331	1993	September 25		04	0X0
MET	Pr >5 MeV	0319	0647-0553	3.9 d	26
MET	Pr >15 MeV	0408	0647	2.6 d	4.5
MET	Pr >25 MeV	0408	0553	2.2 d	1.3
MET	Pr >30 MeV	0408	0647	1.9 d	1.2
MET	Pr >40 MeV	0408	0553	1.4 d	0.9
MET	Pr >90 MeV	0408	0553	0.9 d	0.35

Source: unknown

332	1994	February 20		<02	3X0
MET	Pr >5 MeV	<0227	(0827-0921)/21d0939	>13 h	229/13600
MET	Pr >15 MeV	<0227	0554/21d0939	>13 h	27/780
MET	Pr >25 MeV	<0227	0227/21d0939	>13 h	5.6/33
MET	Pr >30 MeV	<0227	0554/21d0939	>13 h	4.5/40
MET	Pr >40 MeV	<0227	0227/21d0939	>13 h	3.0/7.2
MET	Pr >90 MeV	<0227	0227/21d0939	12 h	0.31/0.14

Source: * flare <0138 N09 W02 3B AR 7671
 ▲ SC 21d0901

333	1994	October 19		22	1X0
MET	Pr >5 MeV	2219	20d0512		219
MET	Pr >15 MeV	2219	20d0329	1.8 d	18
MET	Pr >25 MeV	2219	20d0329		4.3
MET	Pr >30 MeV	2219	20d0329	1.1 d	4.1
MET	Pr >40 MeV	2219	20d0002	1.3 d	2.1
MET	Pr >90 MeV	2219	20d0002	18 h	0.13

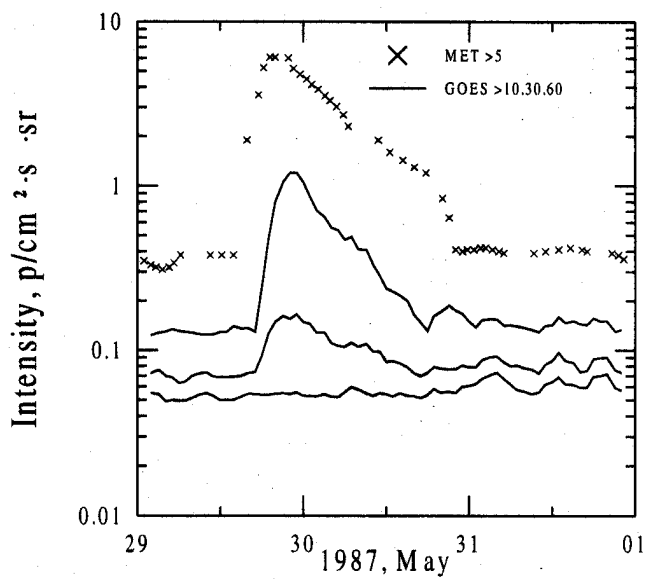
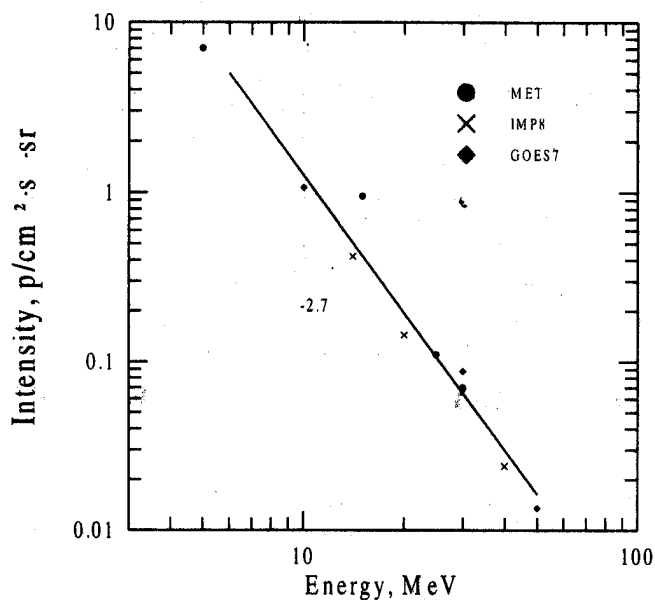
Source: * soft X-ray M3.2/microwave burst 2045-2351
 Ø flare 2235 N12 W24 1F AR 7790
 no flare patrol 2014-2233
 ▲ SC 1452, 22d0849

334	1995	October 20		06	1X0
MET	Pr >5 MeV	0625	1505	3.2 d	128
MET	Pr >15 MeV	0625	0857	2.8 d	12
MET	Pr >25 MeV	0625	0857	2.7 d	2.6
MET	Pr >30 MeV	0625	0808	2.7 d	2.36
MET	Pr >40 MeV	0625	0808	2.4 d	1

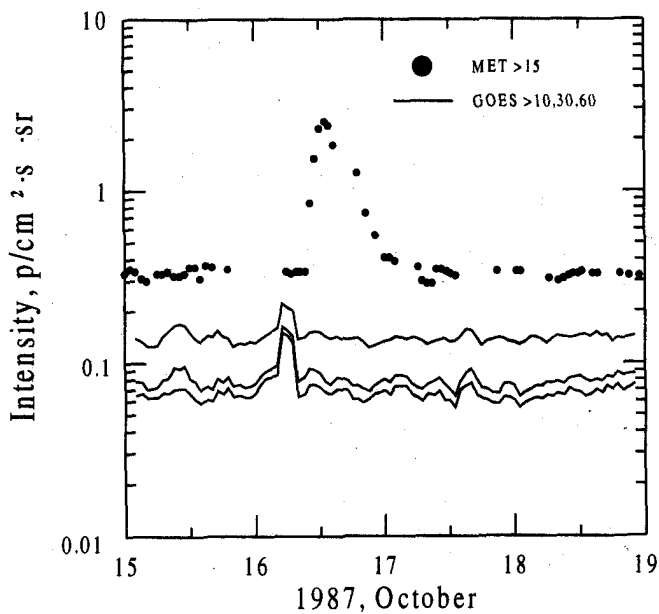
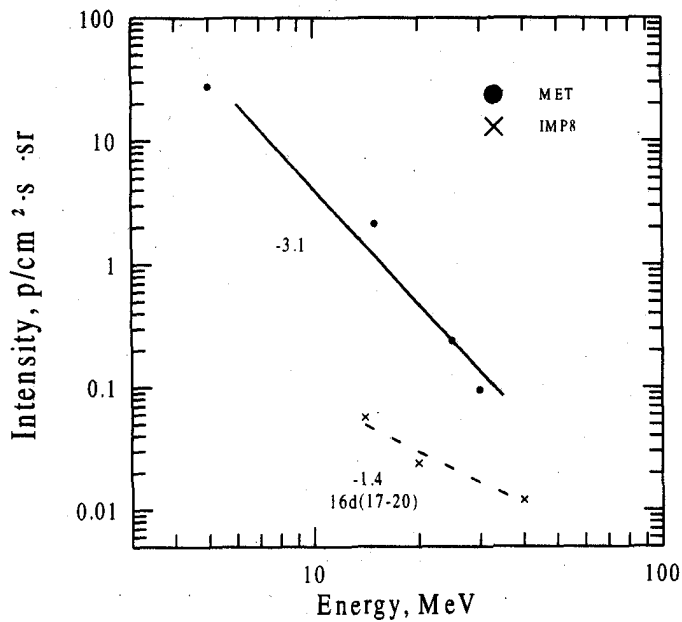
Source: * flare 0553 S11 W53 1N AR 7912

Proton energy spectra and
intensity-time profiles

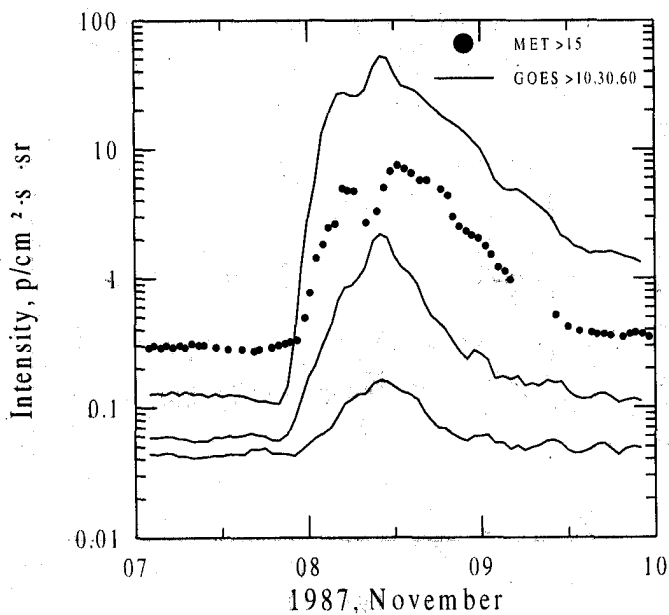
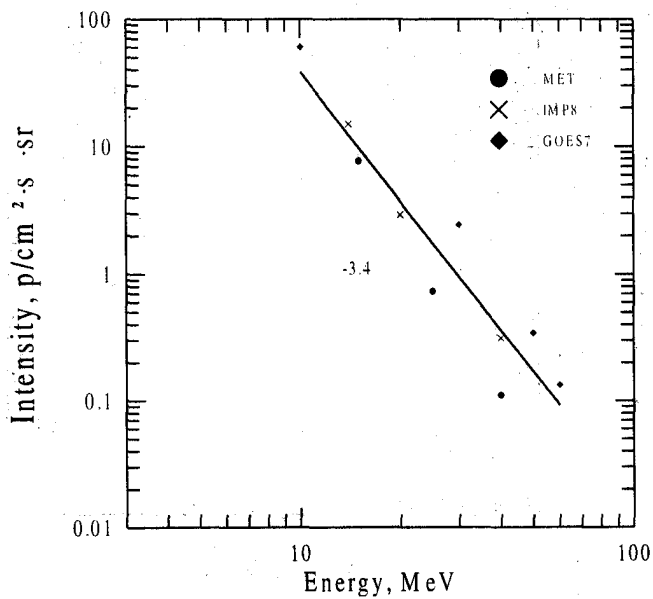
Source: ☐ active region AR 4811 is two days beyond W-limb
☐ active prominence <1710 N28 W90

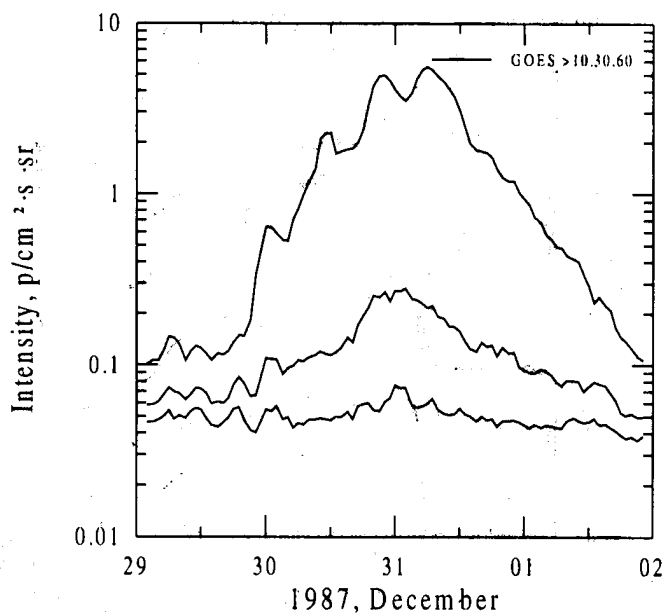
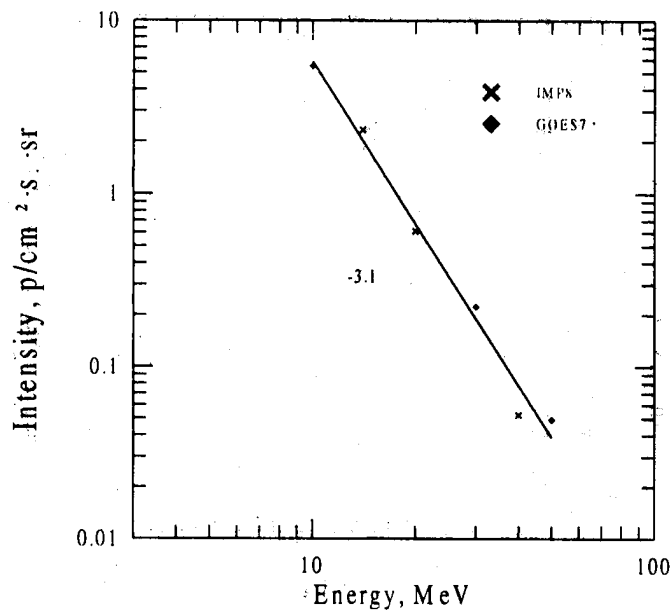


Source: ● flare 0950 N22 W09 1B AR 4866

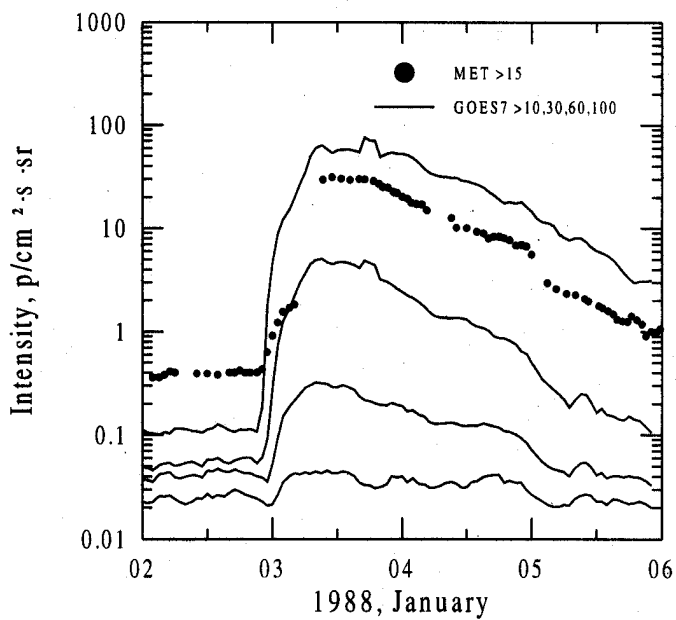
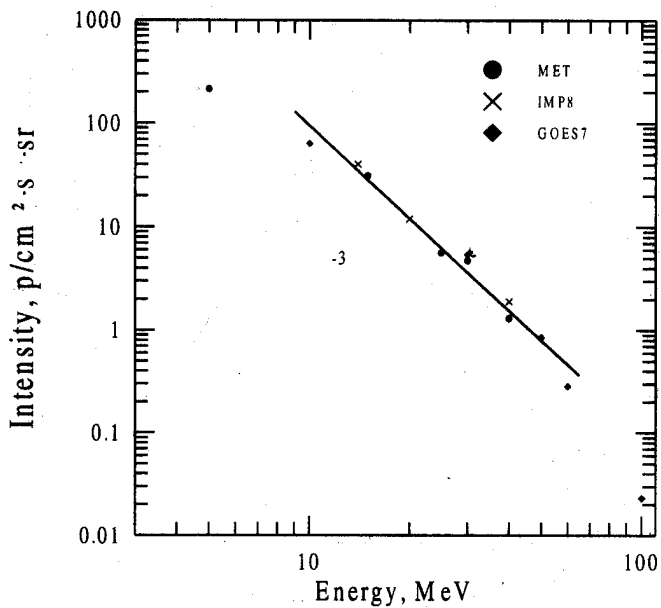


Source: ■ active region AR 4866 is 1.5 days beyond W-limb
 □ flare 7d2028 N31 W90 1N AR 4875

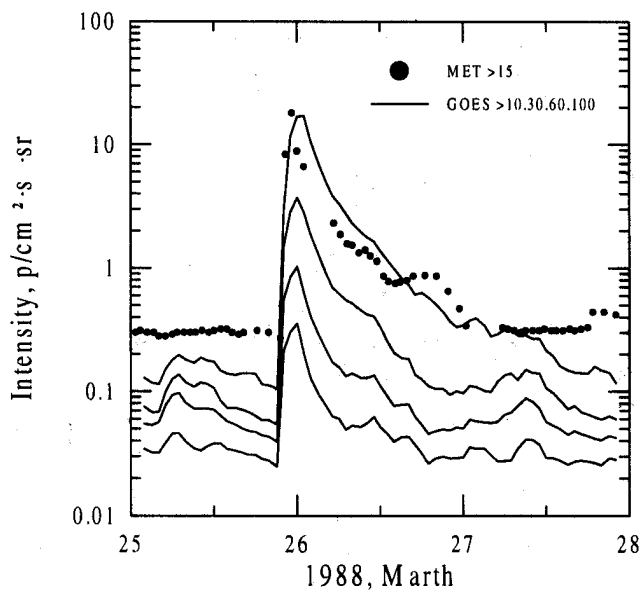
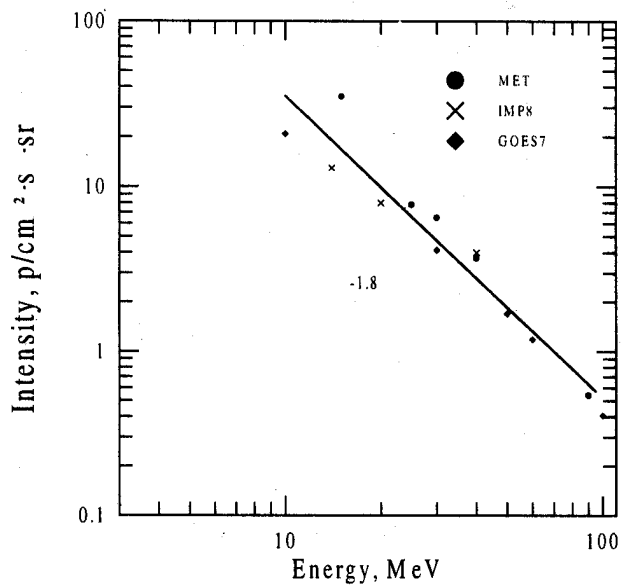


Source: \diamond activity of region AR 4912

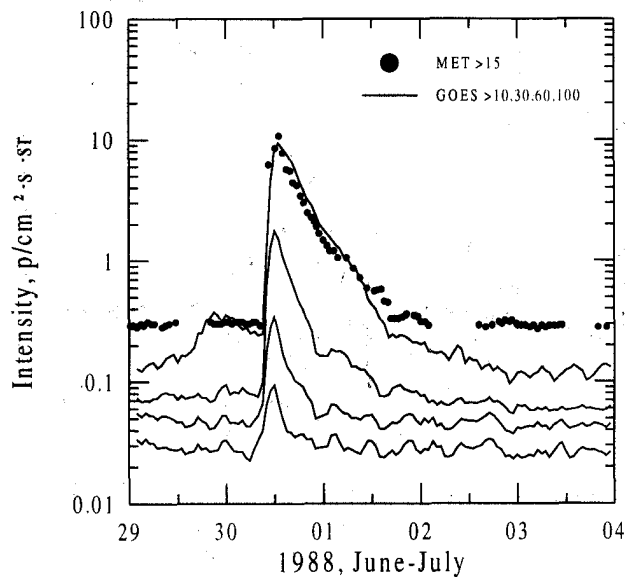
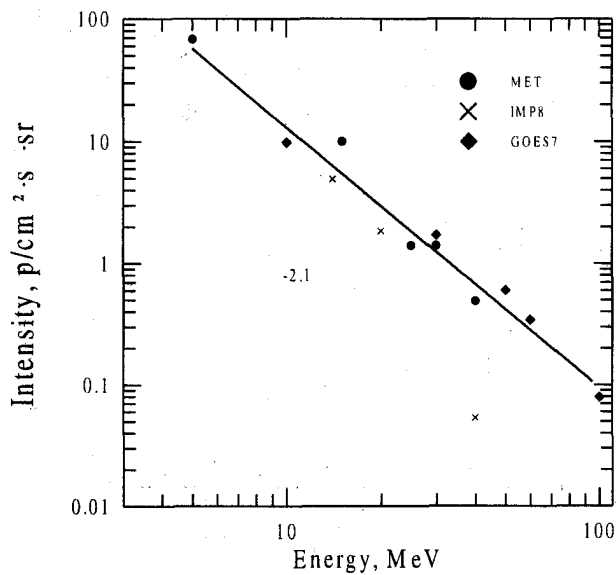
Source: ● flare 2111 S35 W18 3N AR 4912



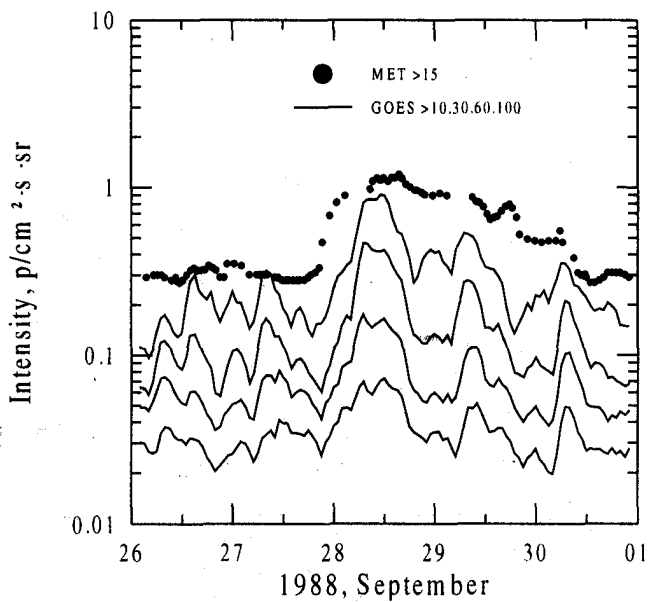
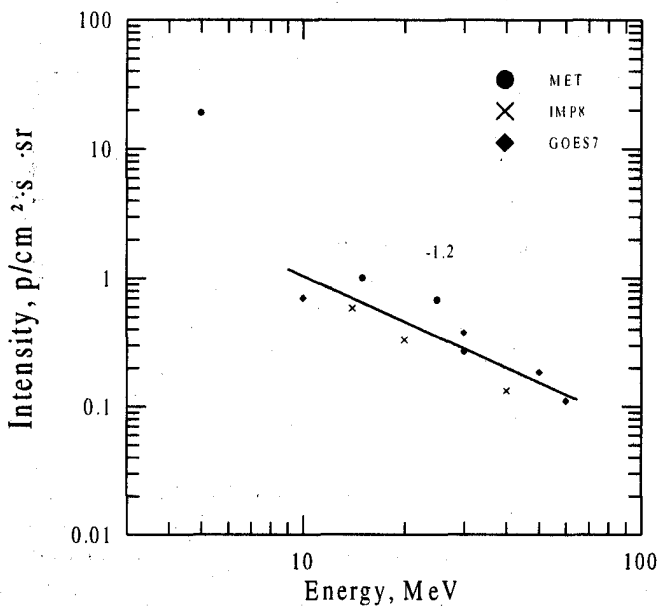
Source: \odot flare 2127 S28 W82 SF AR 4964
 \square eruptive prominence <2145 N21W90 AR4965
 \blacktriangle SC 27d1347



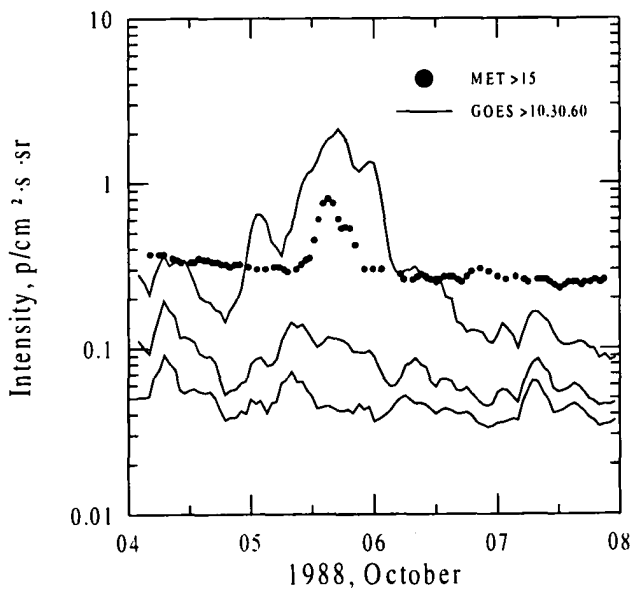
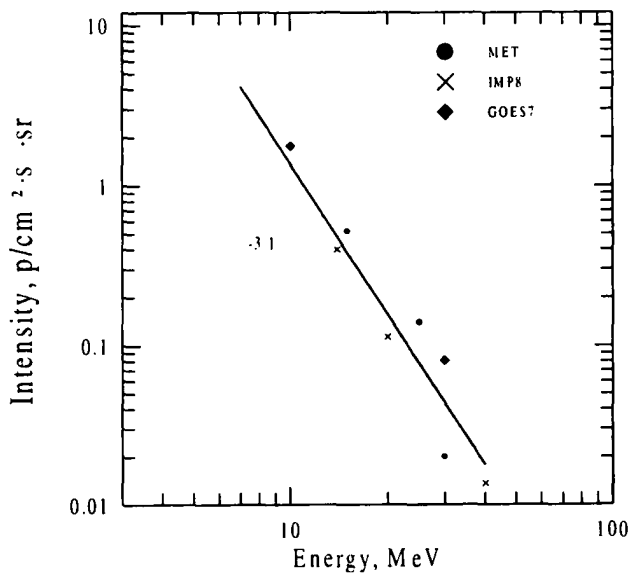
Source: \bullet flare 0903 S16 E23 2B AR 5060
 \circ flare 29d0722 S19 E24 2B AR 5058A
 \circ flare 29d2015 S19 E27 1B AR 5060
 \blacktriangle SC 29d0429



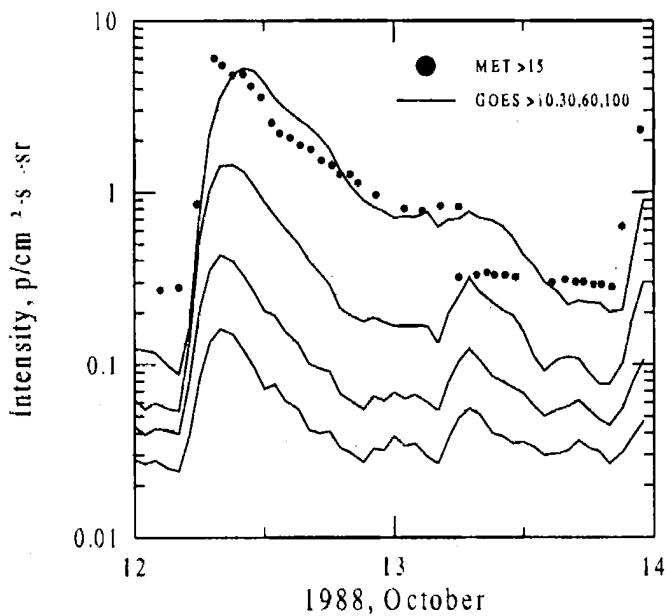
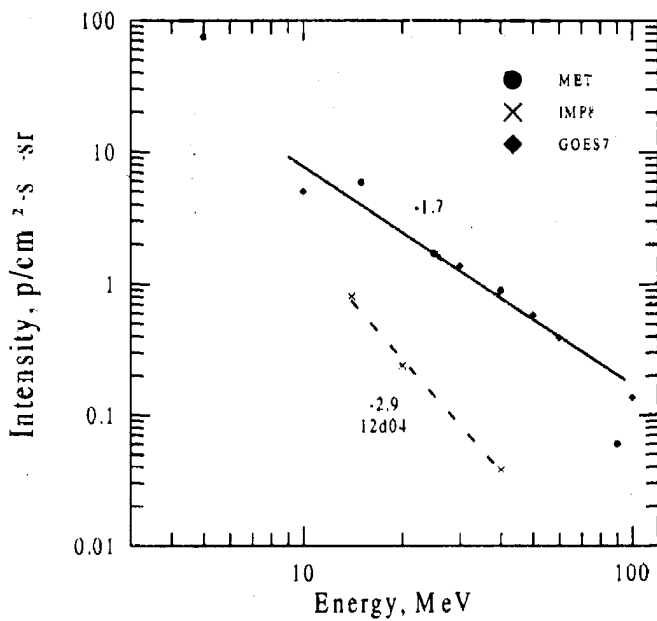
Source: ● flare 1606 S28 E66 2B AR 5171
 ▲ SC 28d2045



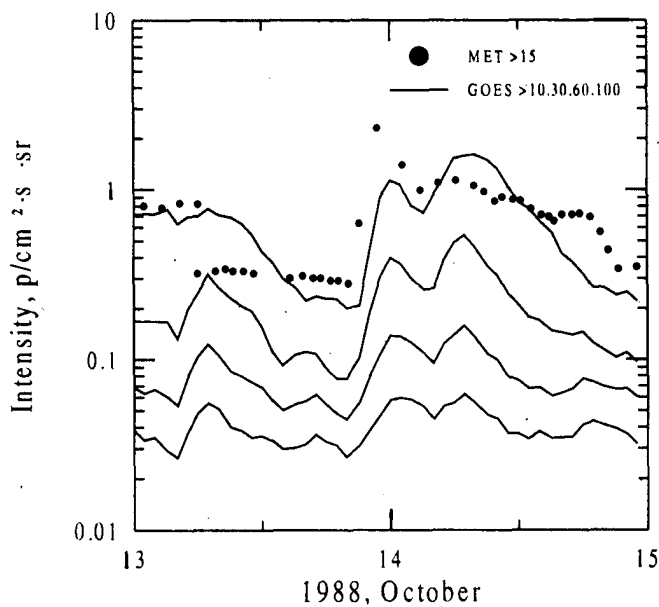
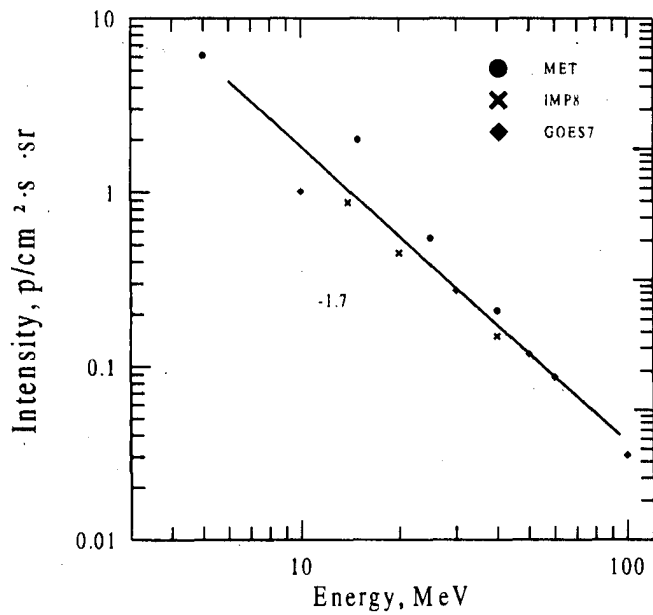
Source: ♦ activity of region AR 5171
 Ø flare 3d1449 S27 W17 2B AR 5171
 Ø flare 3d2322 S28 W19 2B AR 5171
 Ø flare 0616 S30 W38 2B AR 5171
 ▲ SC 4d2015, 5d1646, 6d0038



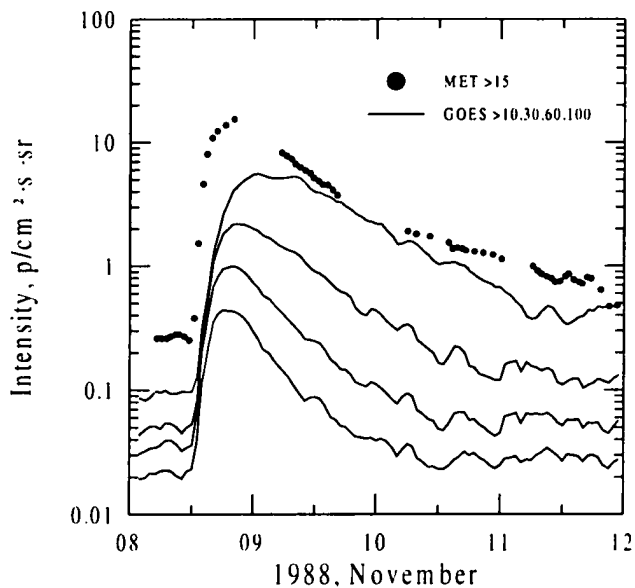
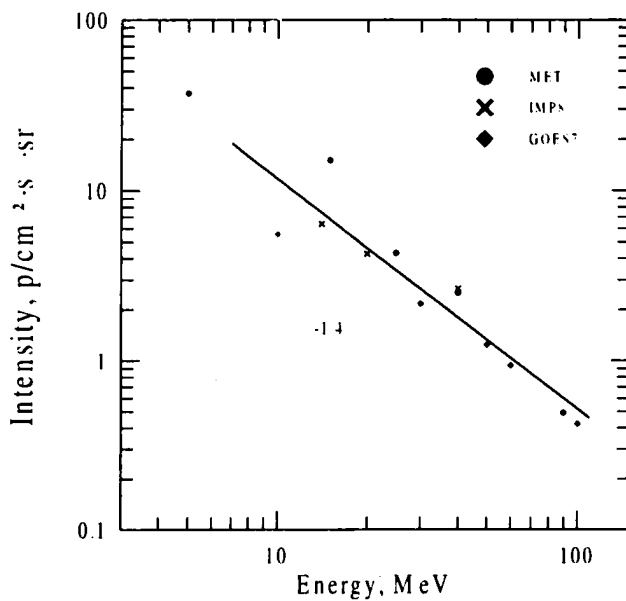
Source: ● flare 0456 S21 W68 2N AR 5175



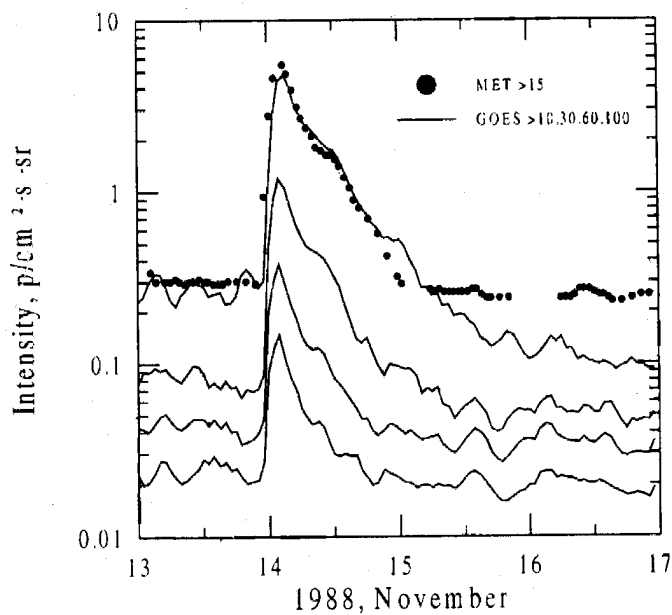
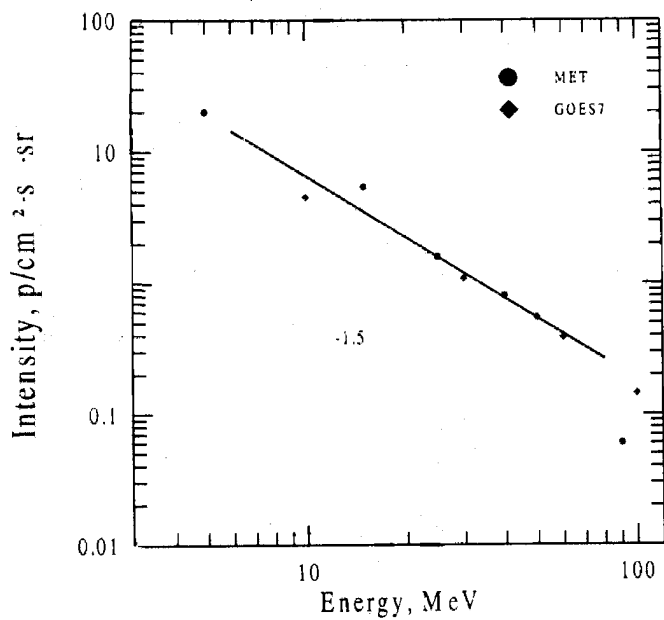
Source: ● flare 2030 S20 W88 SN AR 5175



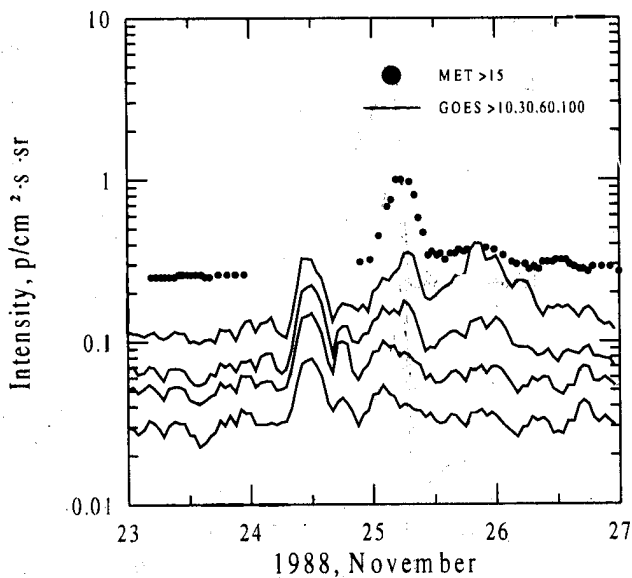
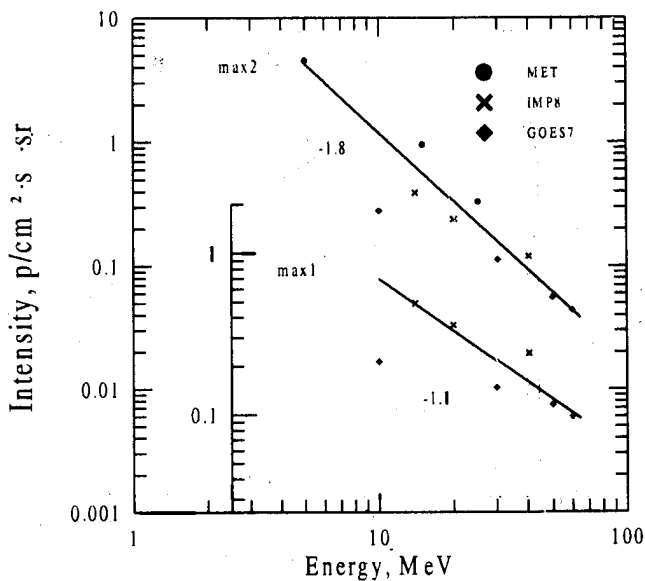
Source: ● flare 1229 N17 W07 2N AR 5222
 ▲ SC 9d0604, 11d0753



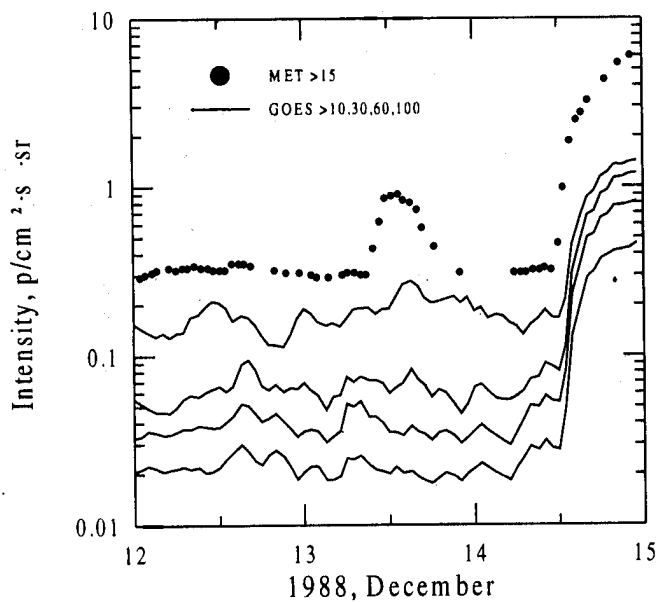
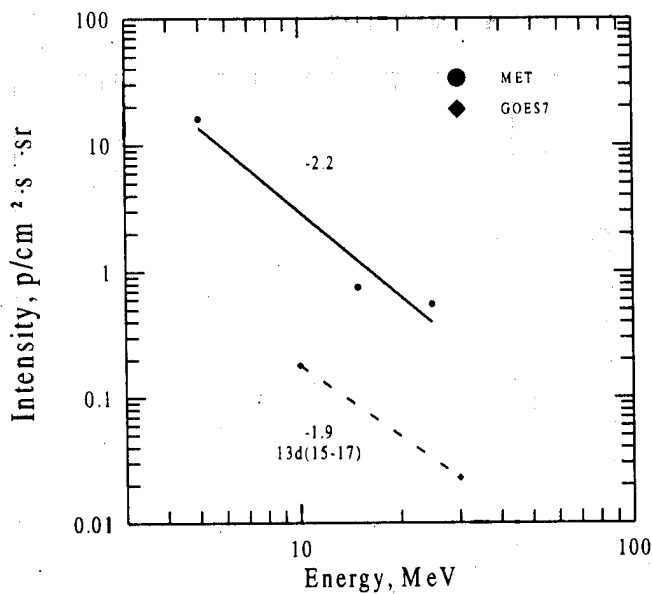
Source: ● flare 13d2247 S24 W27 1B AR 5227



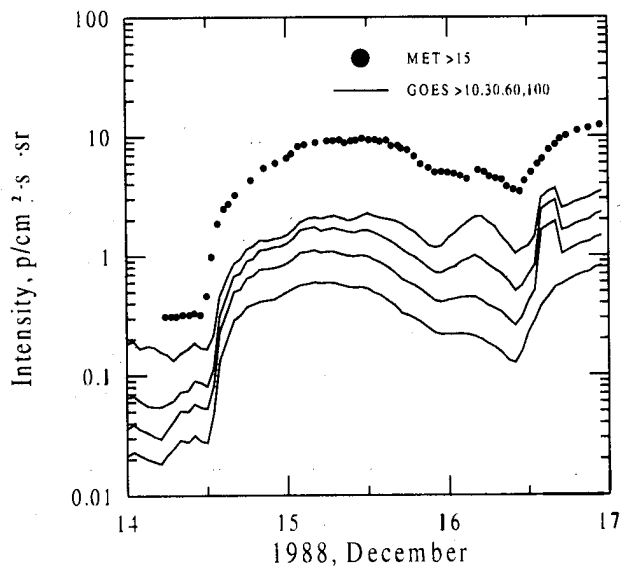
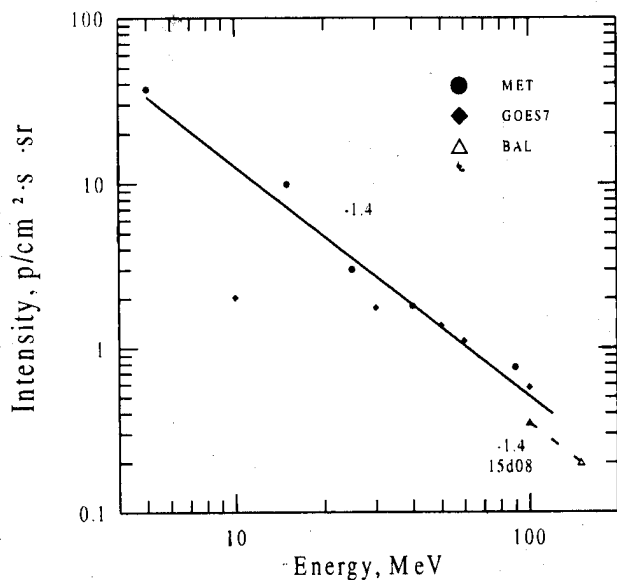
Source: ☐ activity on W-limb
type II burst 0555-0601; no flare reported



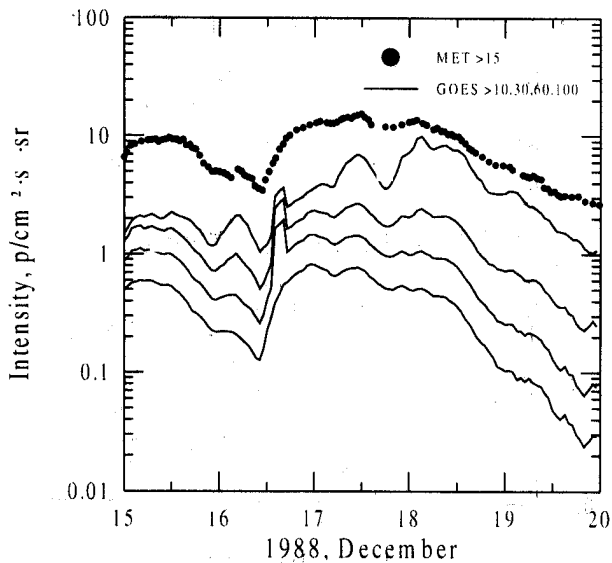
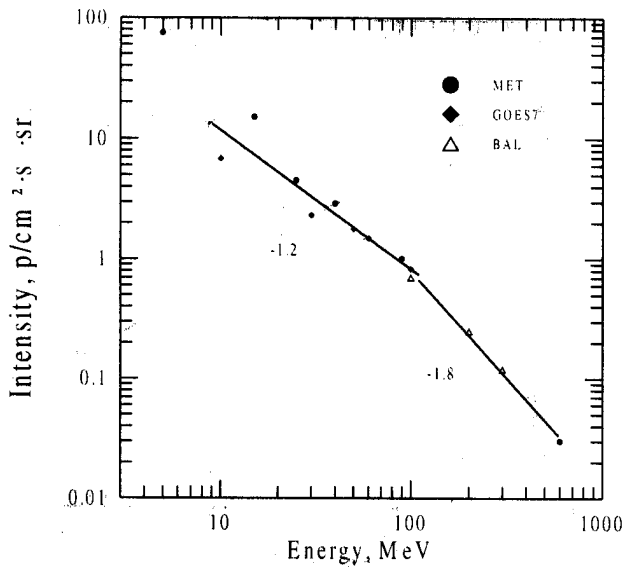
Source: ☉ flare 1029 N20 W40 IB AR 5265
 ▲ SC 14d1337



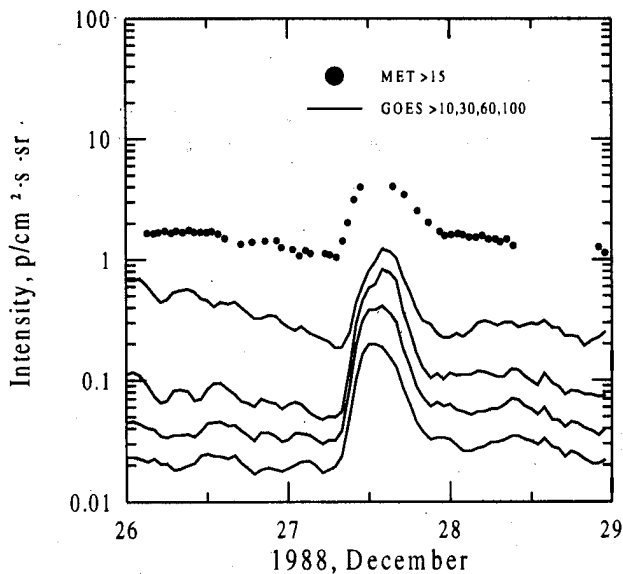
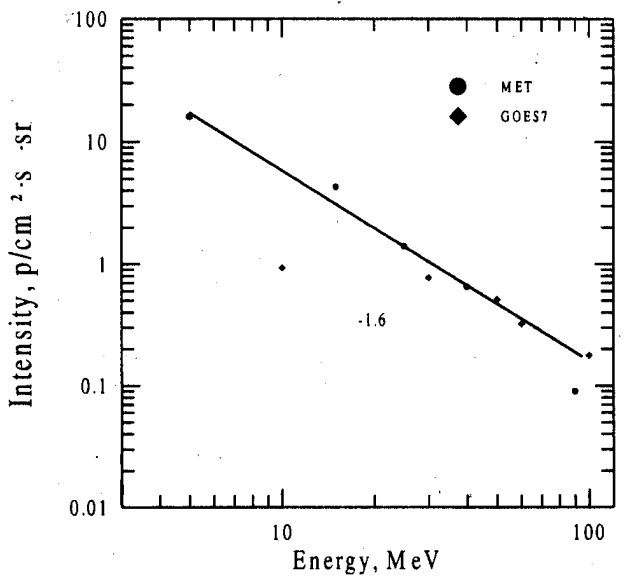
Source: \odot flare 1337 N30 E59 1N AR 5278
 \emptyset flare 15d0445 N27 E58 2B AR 5278
 15d0446 N28 E64 1N AR 5280
 \blacktriangle SC 1337



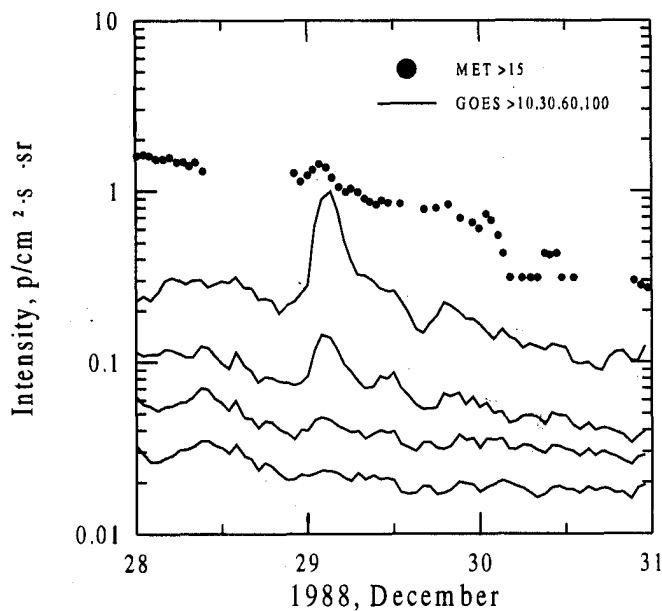
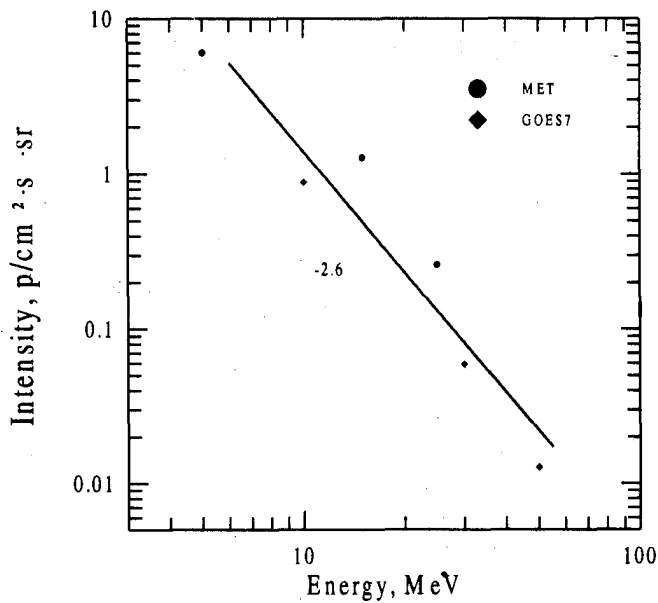
Source: ● flare 0826 N27 E33 2B AR 5278
 ○ flare 17d0451 N29 E28 SN AR 5278
 ○ flare <17d1732 S14 W35 1B AR 5272
 ▲ SC 17d1824



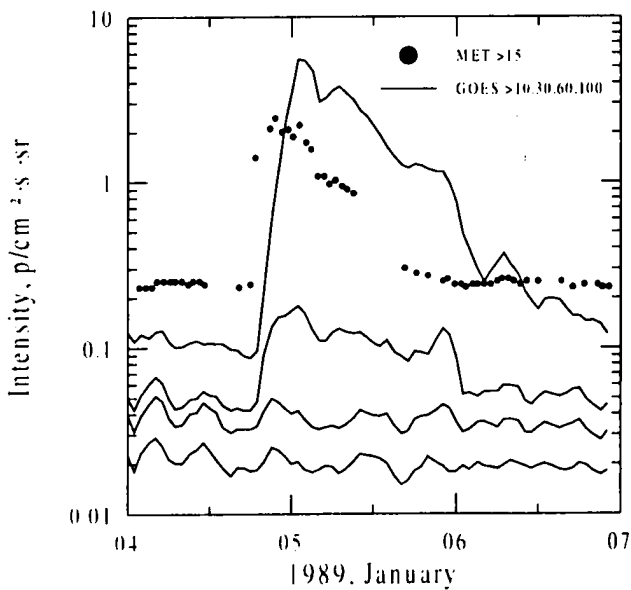
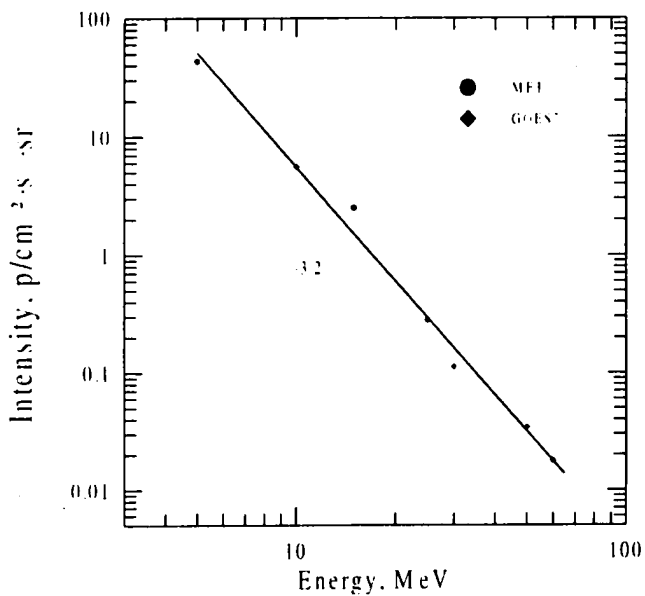
- Source: ☐ type II burst 0712-0911; no flare reported
☐ active prominence <0435->1031 S22 W90 AR 5282
☐ flare 0527 N21 W36 SN AR 5285
 0520 S17 E17 SF AR 5292



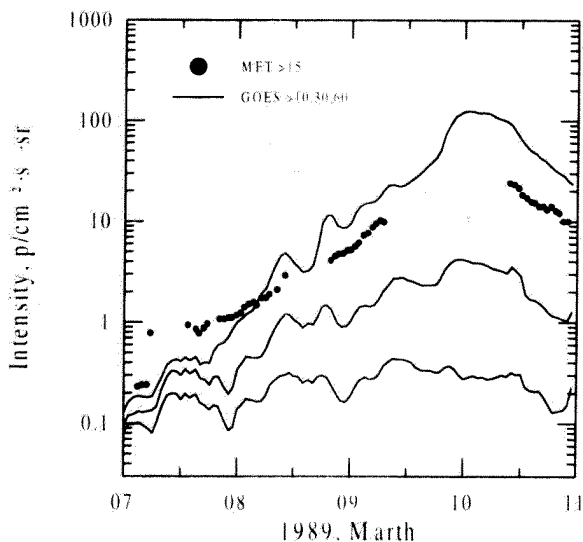
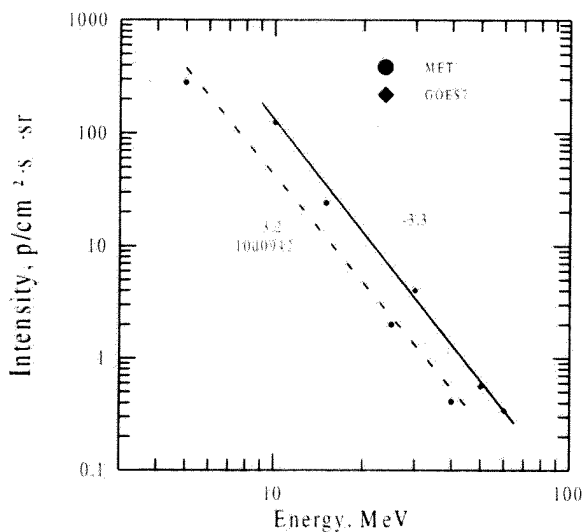
Source: ● flare 28d2342 N20 W54 1B AR 5285



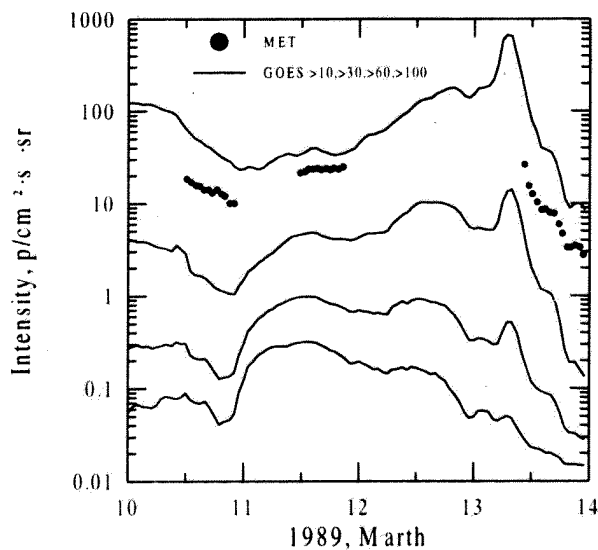
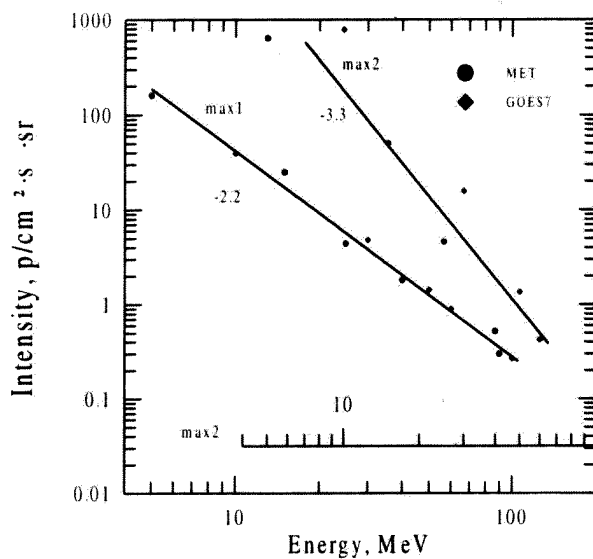
Source: ● flare 1603 S20 W60 1N AR 5303
 ▲ SC 2305, 5d1324, 6d2354



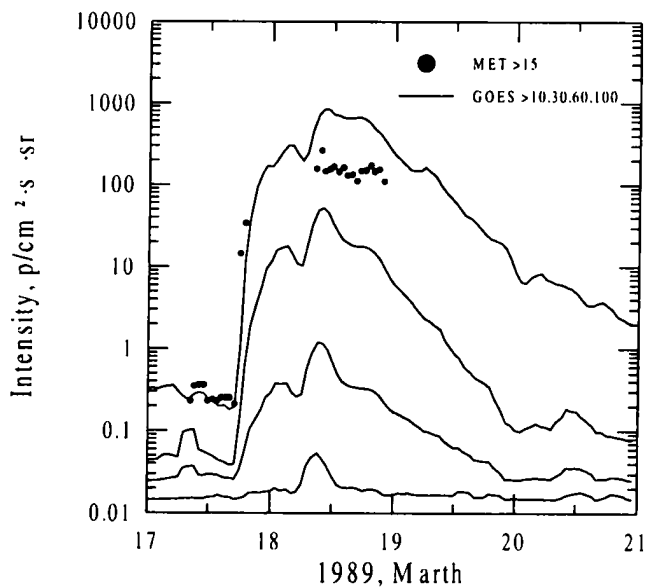
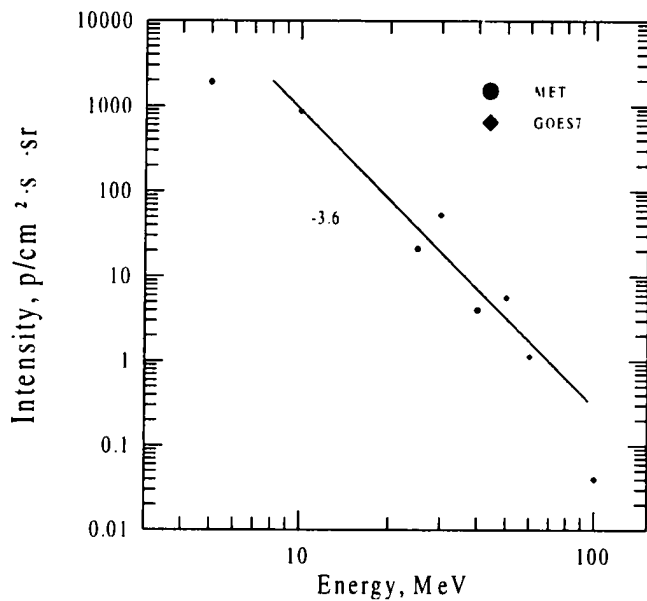
Source: ● high flare activity of region AR 5395
 ○ flare 6d1354 N33 E71 3B AR 5395
 ○ flare 0519 N30 E69 1N AR 5395
 ○ flare 1436 N31 E65 2B AR 5395
 ○ flare 8d0825 N34 E55 2B AR 5395
 ○ flare 9d1515 N30 E38 4B AR 5395
 ▲ SC 8d1755



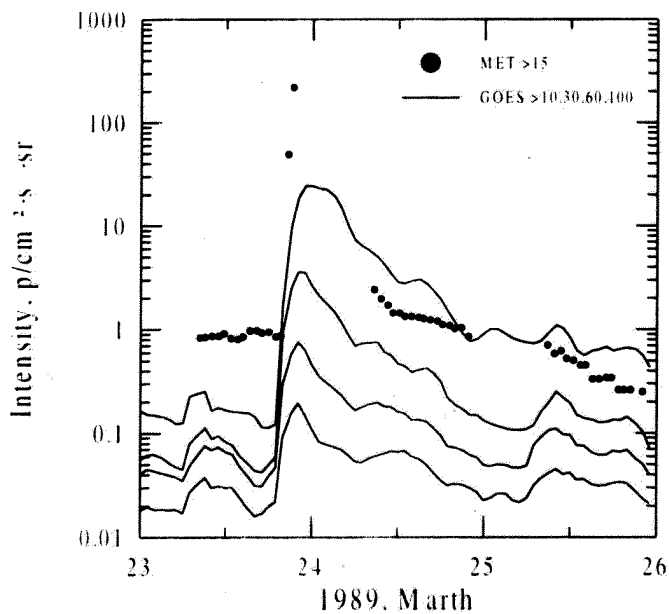
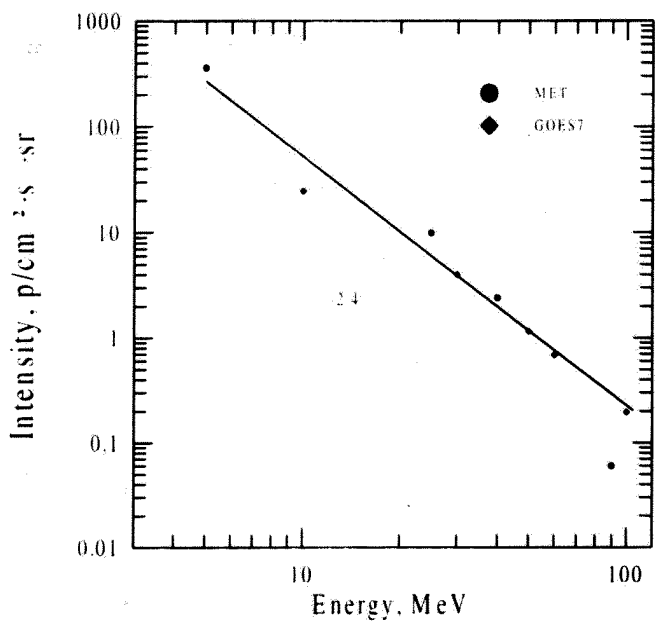
Source: ♦ high flare activity of region AR 5395
 ⊗ flare 1837 N32 E22 3B AR 5395
 ⊗ flare 11d1933 N27 E10 2B AR 5395
 ⊗ flare 13d0259 N29 W02 3N AR 5395
 ▲ SC 13d0127



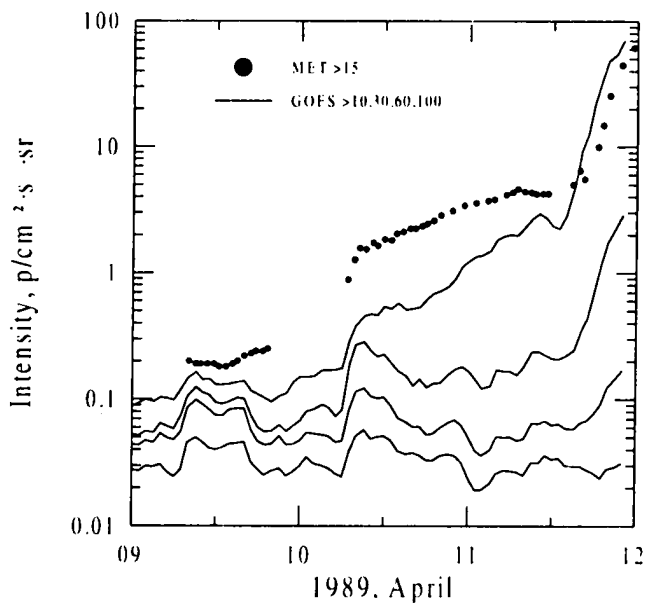
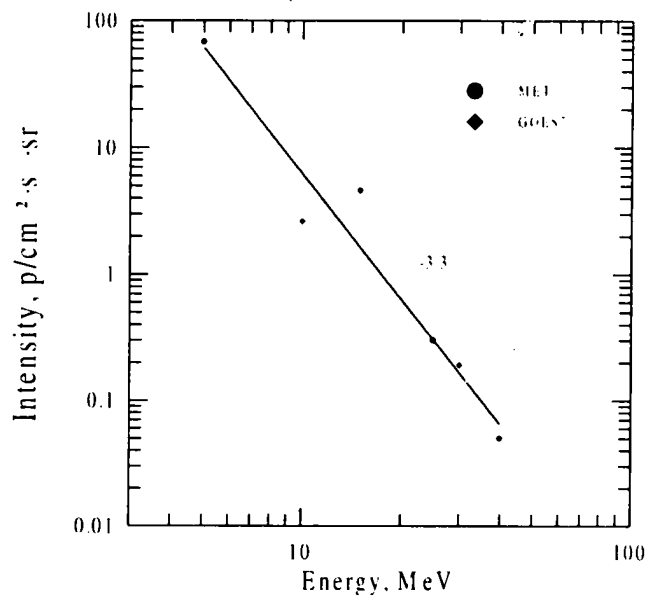
Source: ● flare 1729 N33 W61 2B AR 5395
 ▲ SC 19d0423



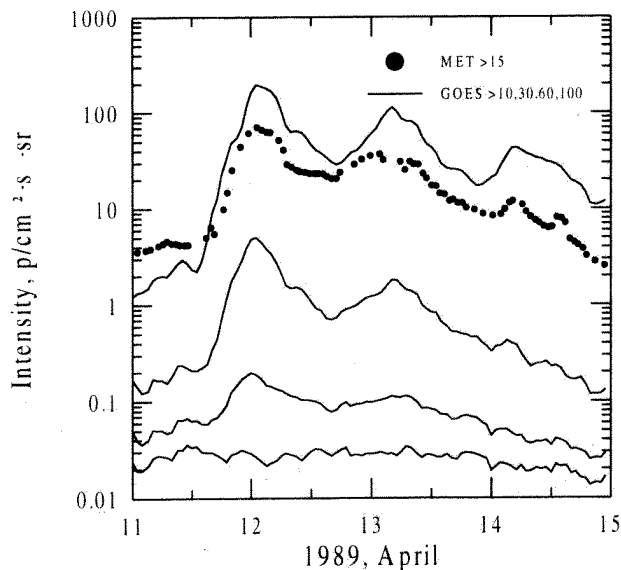
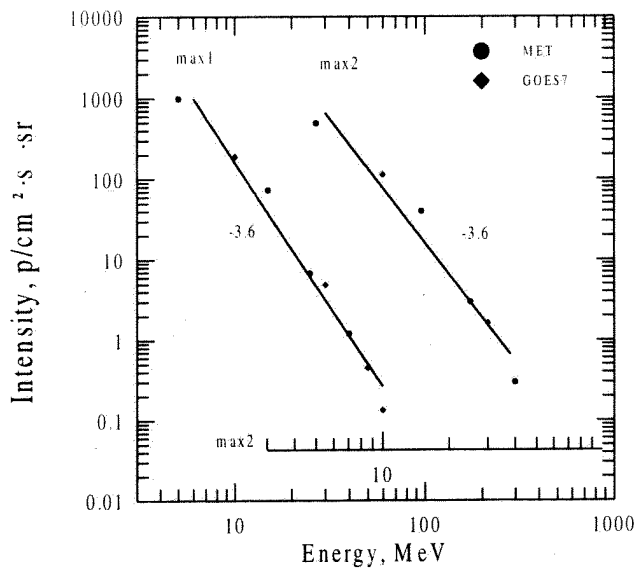
Source: ● flare <1925 N18 W28 3B AR 5409



Source: ● flare 0044 N35 E28 3N AR 5441
 ▲ SC 11d1435



Source: no flare patrol 10d(2137-2206)
 ⊙ X-ray LDE burst M1.2 10d(2134->2357) N40 W08
 ▲ SC 1435, 13d2224

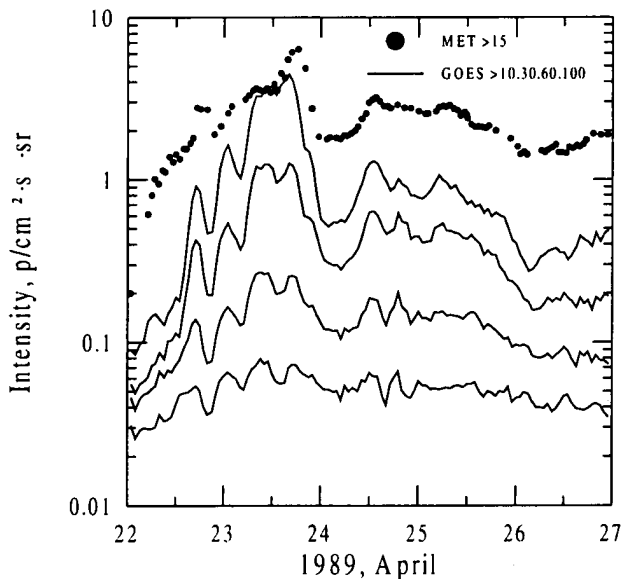
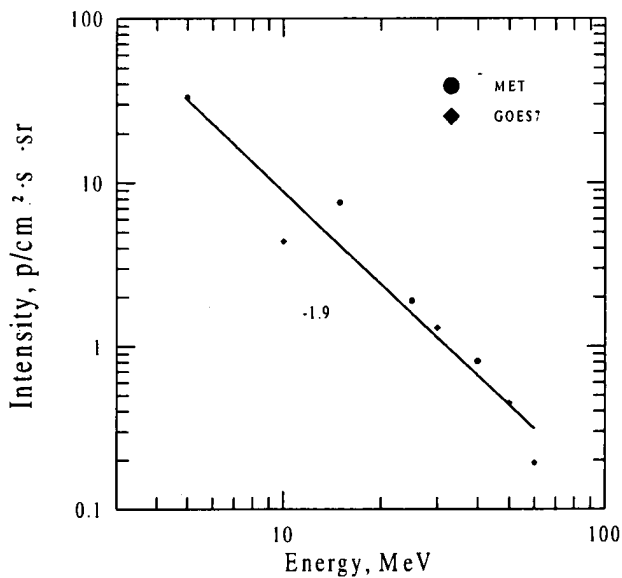


Source: unknown

○ flare 0332 N12 W38 SN AR 5451

○ flare 0545 N12 W39 1N AR 5451

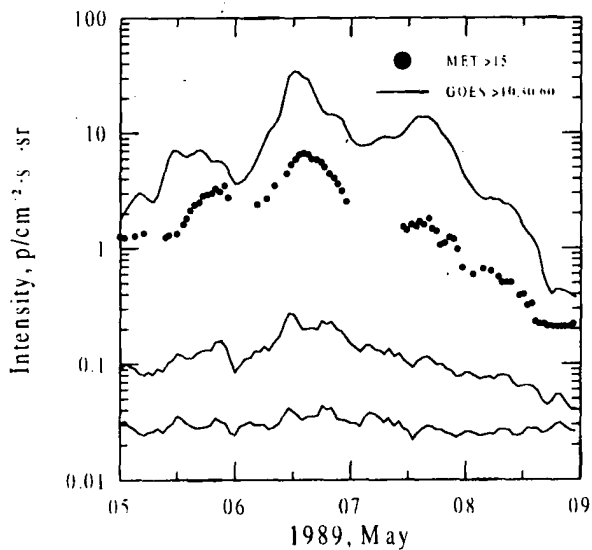
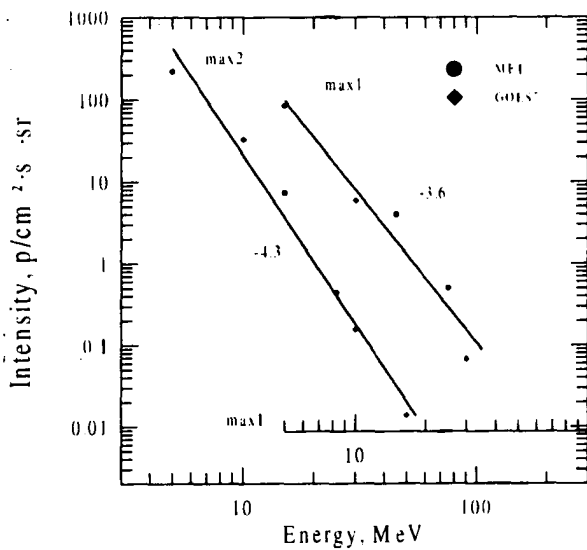
□ region AR 5464 is just before E-limb



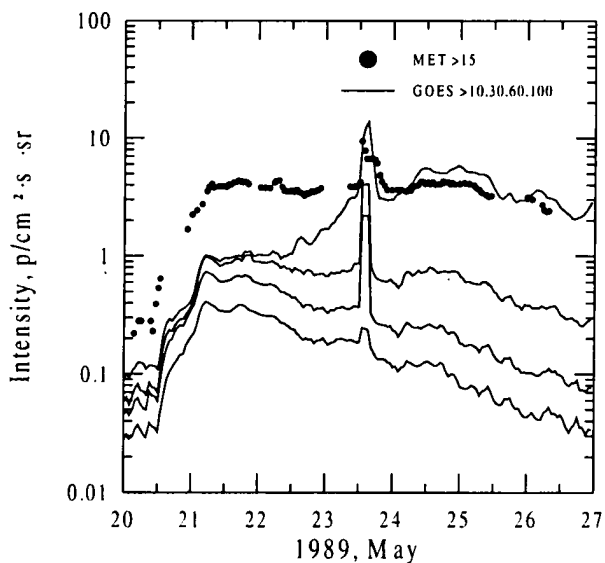
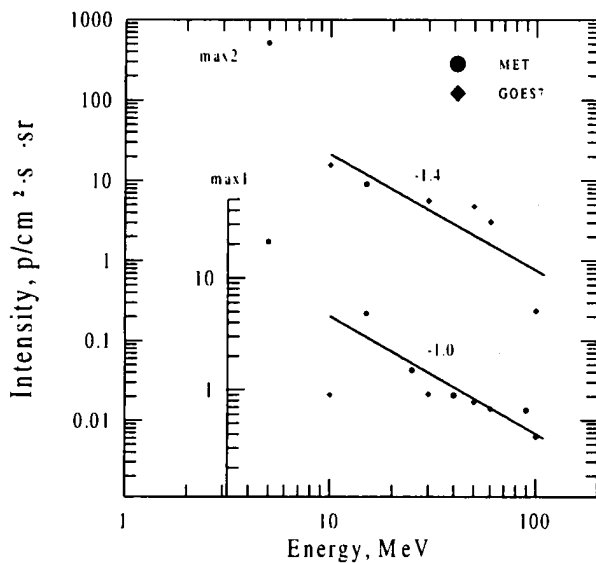
Source:

activity of regions AR 5464, 5470

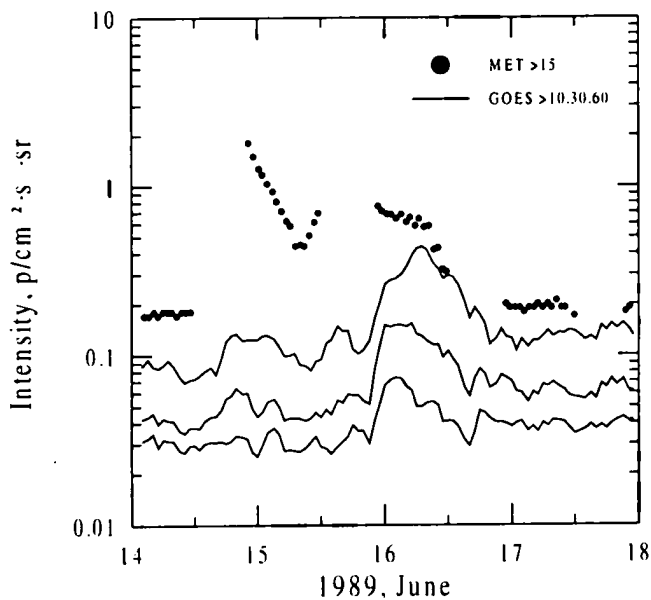
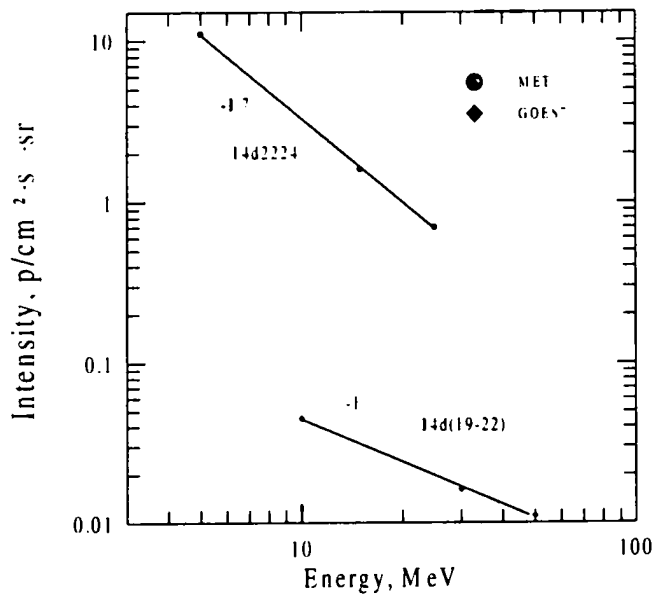
☉	flare	4d1032	S22 W33	2N	AR 5464
☉	flare	0720	N30 E04	2B	AR 5470
☉	flare	6d1442	S20 W65	SF	AR 5464
▲	SC	4d2351, 7d0512			



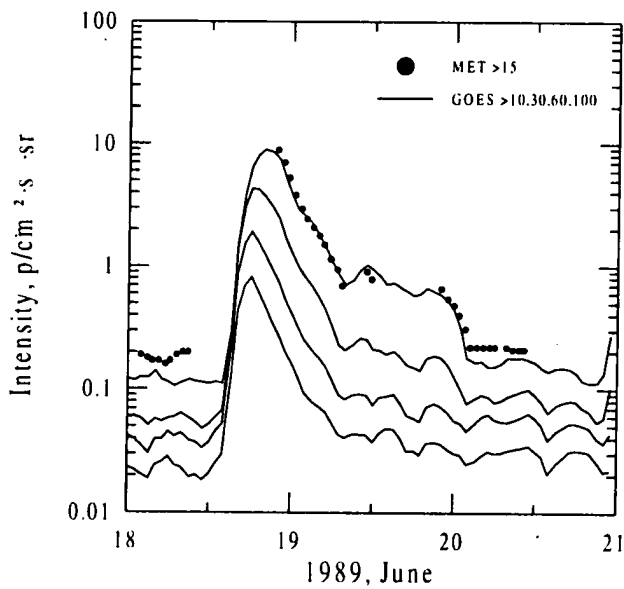
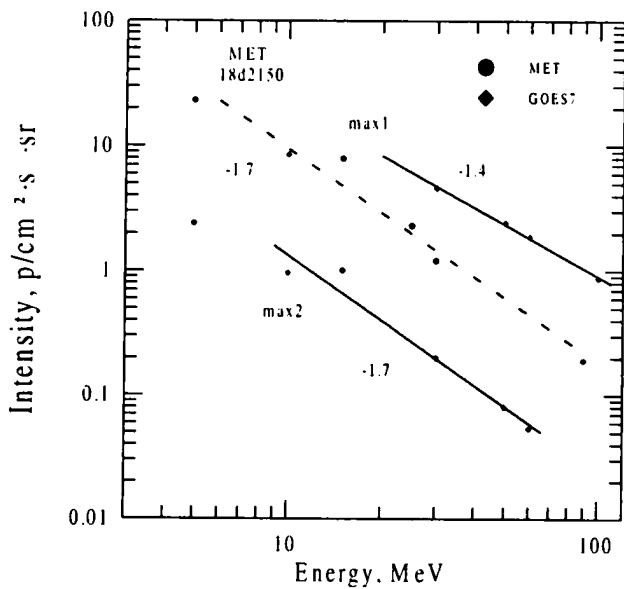
- Source: \square X-ray C1.9; C5.2 0919-1308, and bursts of type II 0921-0927 and of type IV 0922-0956; no flare reported
 \circ flare 22d0000 S21 E15 2B AR 5497
 \blacktriangle SC 0957, 1545, 22d2109, 23d1346



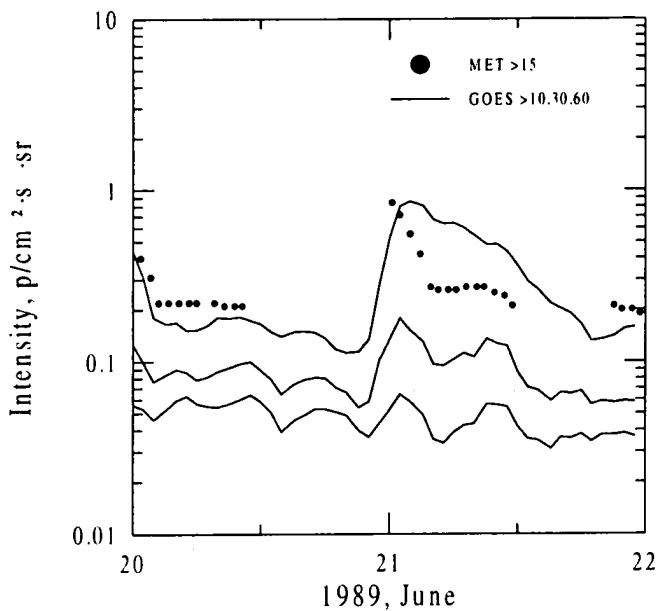
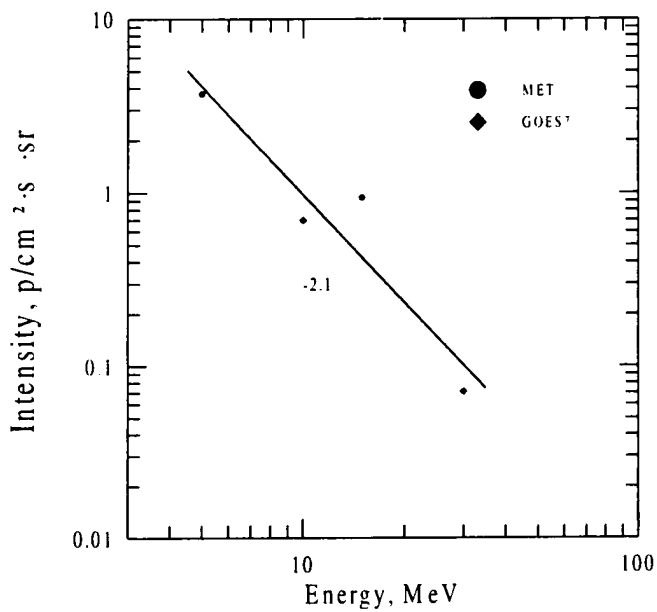
Source: ○ flare 1350 S14 W78 1N AR 5521
 ▲ SC 0107



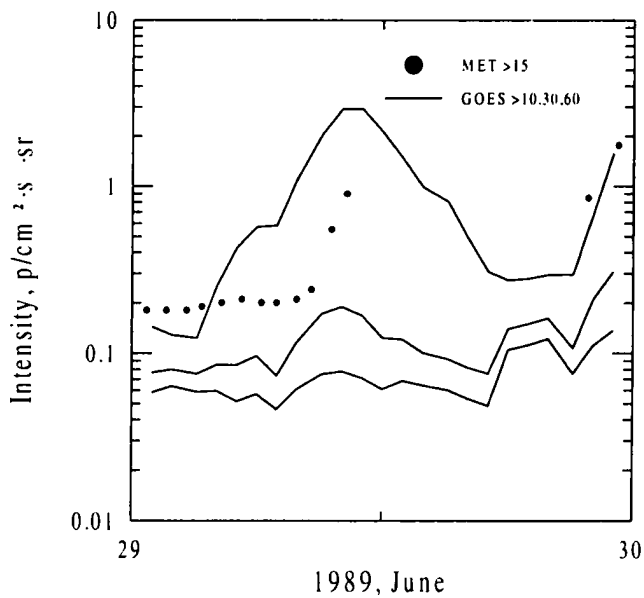
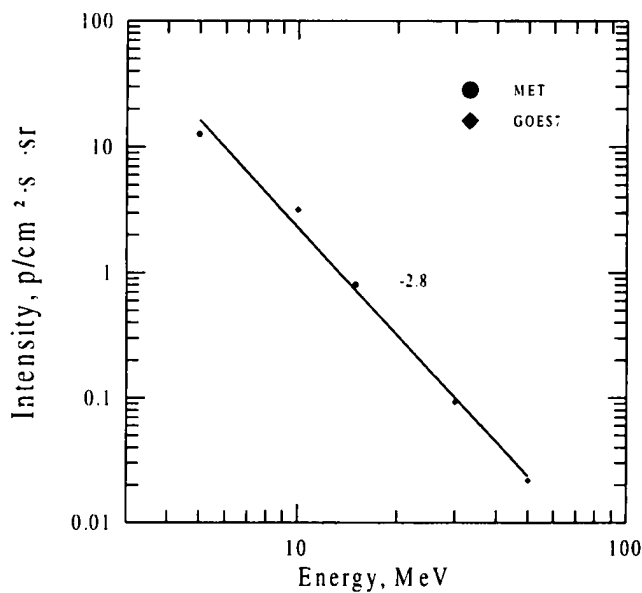
Source: ☉ flare 1440 N12 W30 SF AR 5536
 ☉ flare 19d0529 N19 W58 1N AR 5528



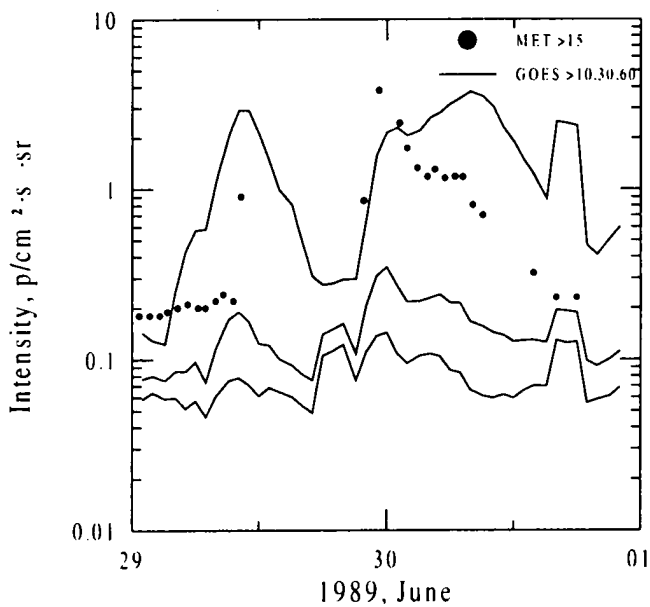
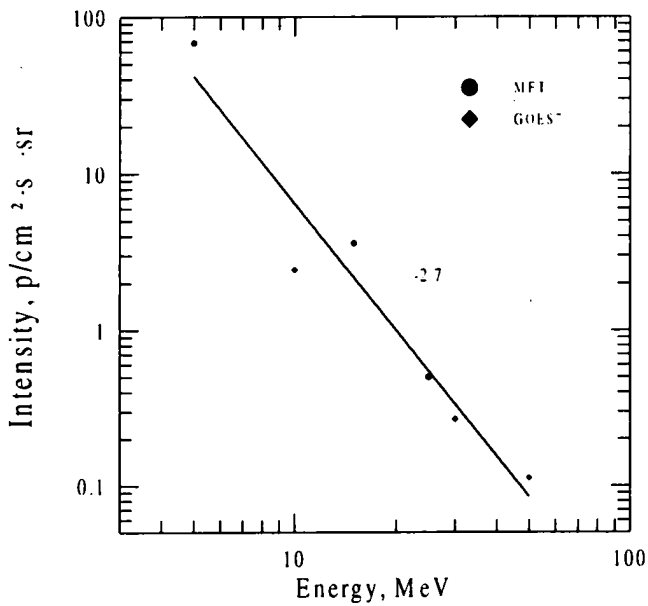
Source: ● flare 2153 N17 W82 1N AR 5528
 ○ flare 1455 N24 W70 3N AR 5528



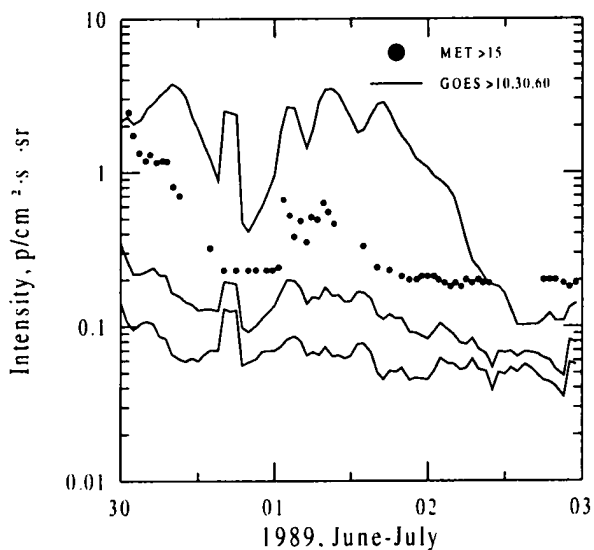
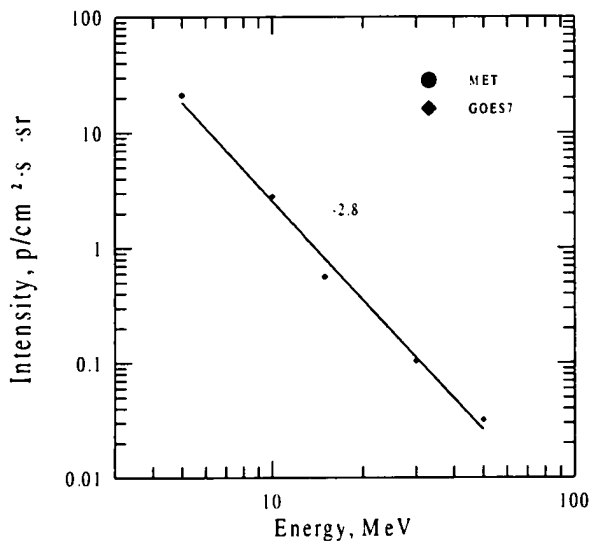
Source: ○ flare 28d1808 N20 E04 1N AR 5569
 ○ flare 0257 N30 W26 2N AR 5555



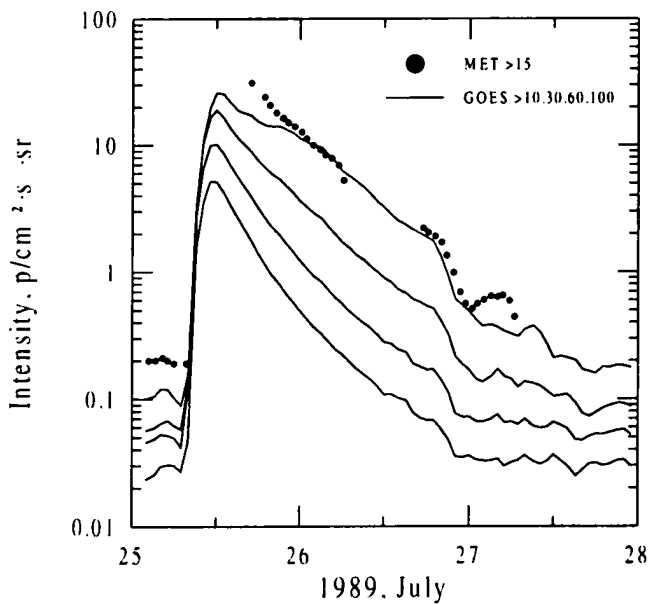
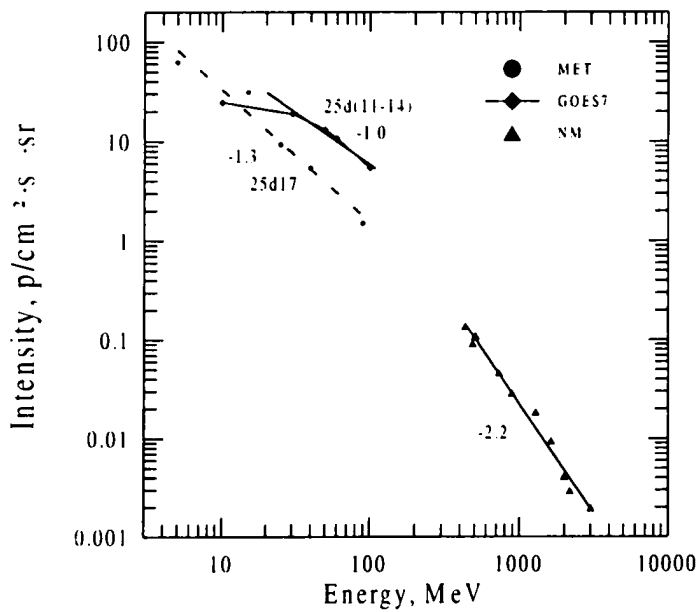
Source: ● flare 2057 N30 W41 1N AR 5555



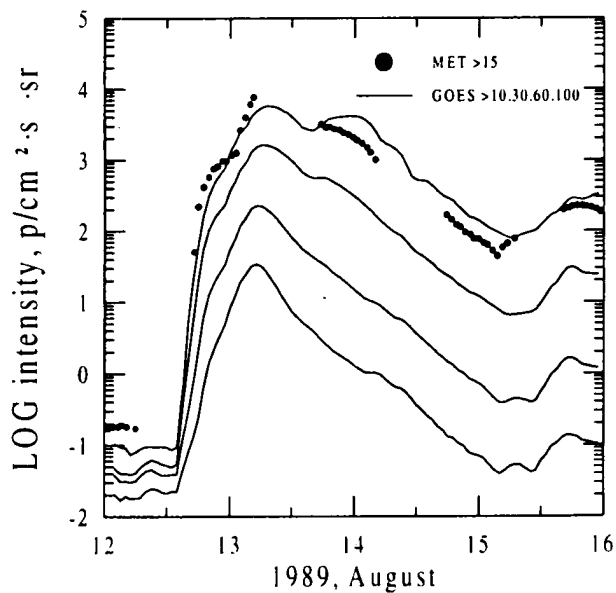
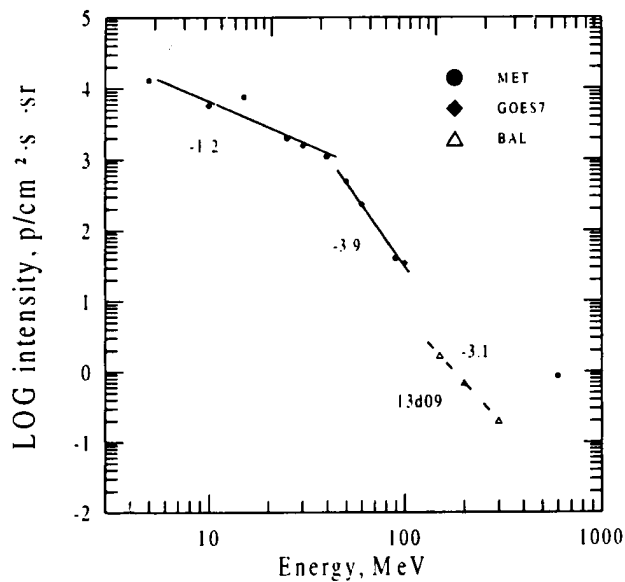
Source: ◇ activity of regions AR 5569, 5572
 ○ flare 0609 S17 E88 1N AR 5572
 ○ flare 1450 N20 W23 1N AR 5569
 ○ flare 1736 N20 W24 SN AR 5569
 ★ SC 1d0717, 1d1546



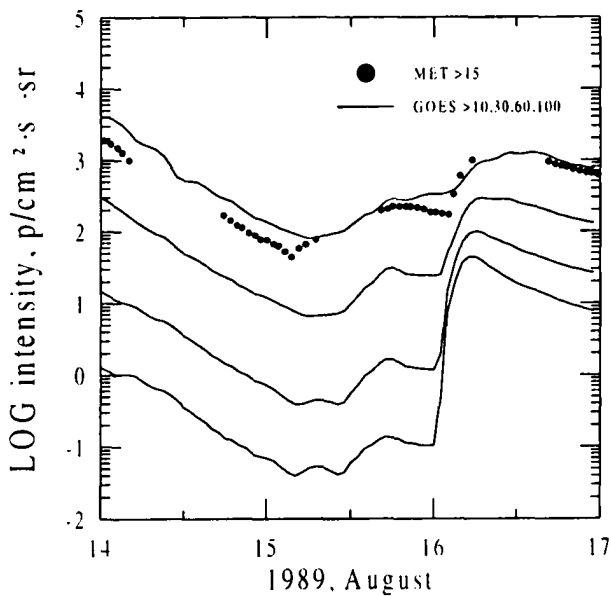
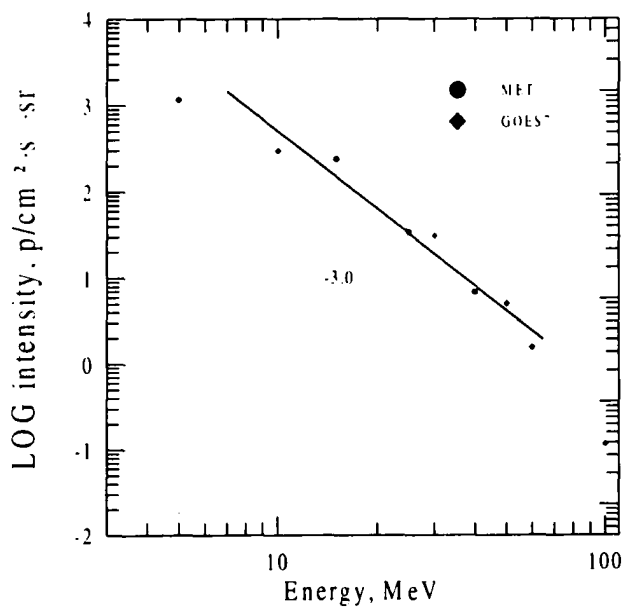
Source: ● flare 0839 N26 W85 1B AR 5603



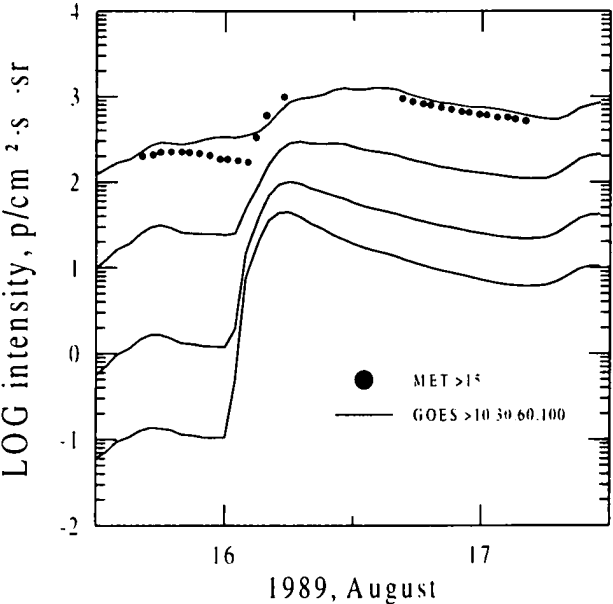
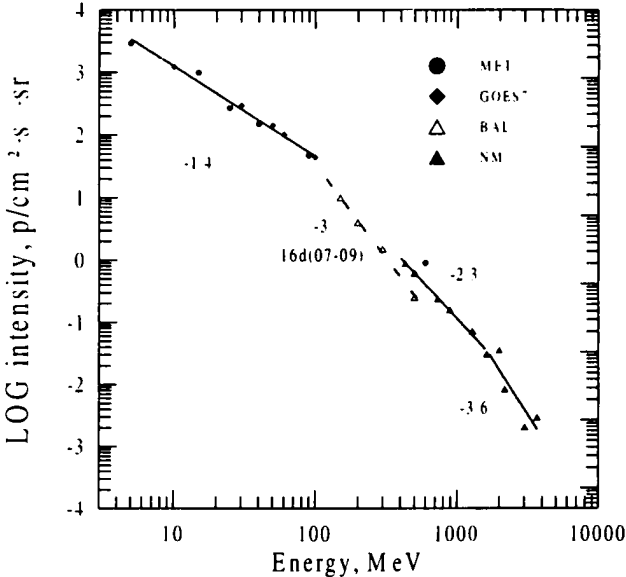
Source: ● flare 1357 S16 W38 2B AR 5629
 ○ flare 14d0031 S15 W60 3B AR 5629
 ▲ SC 14d0152, 14d0613



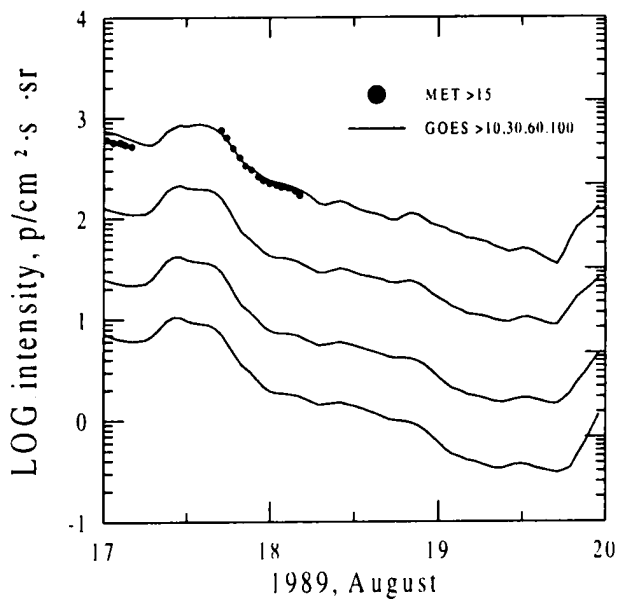
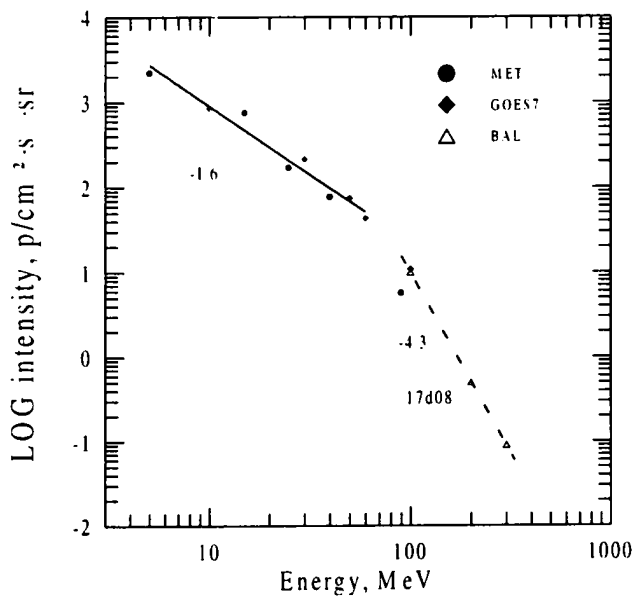
Source: ● flare 0142 S16 W73 IN AR 5629



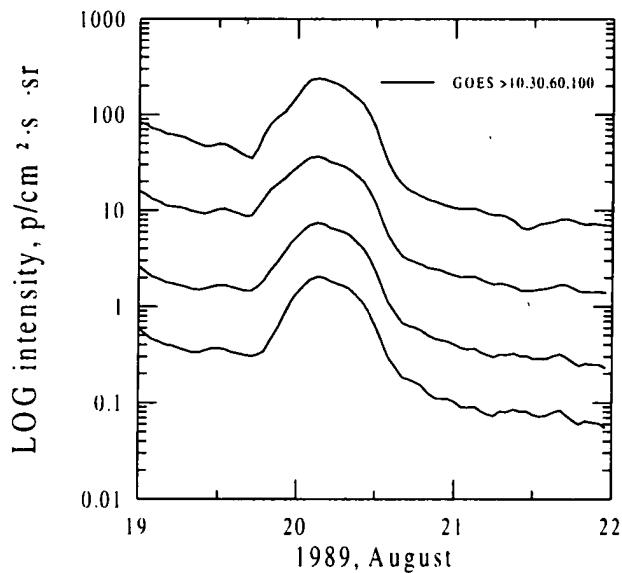
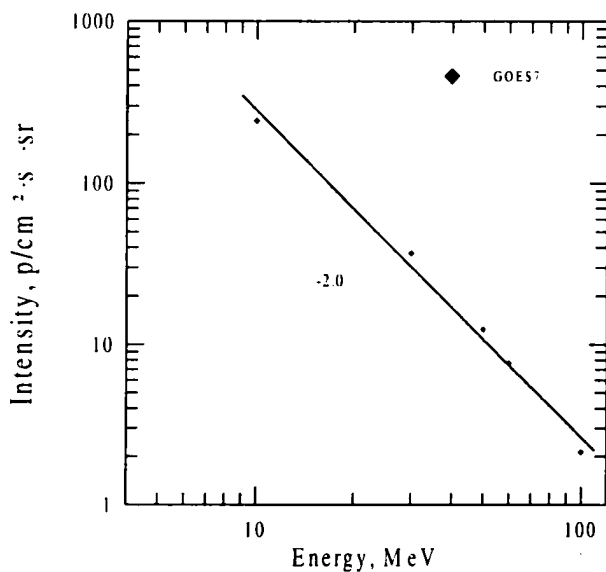
Source: ● flare 0058 S15 W85 2N AR 5629
▲ SC 17d1541



Source: ● flare 0132 S17 W88 SN AR 5629
 ▲ SC 1541

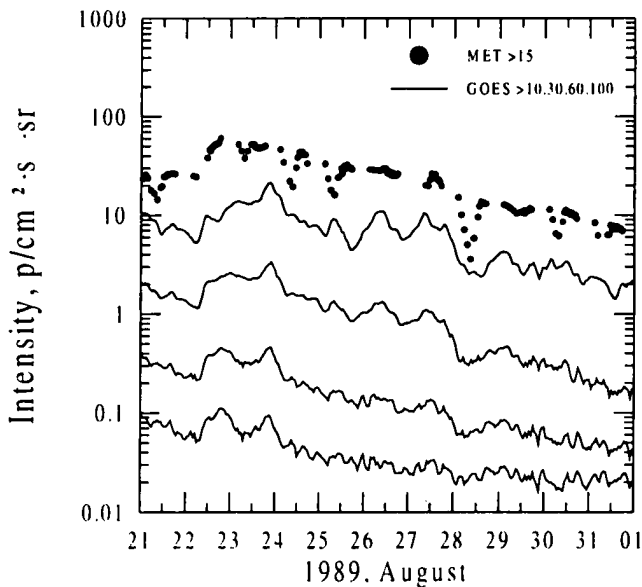
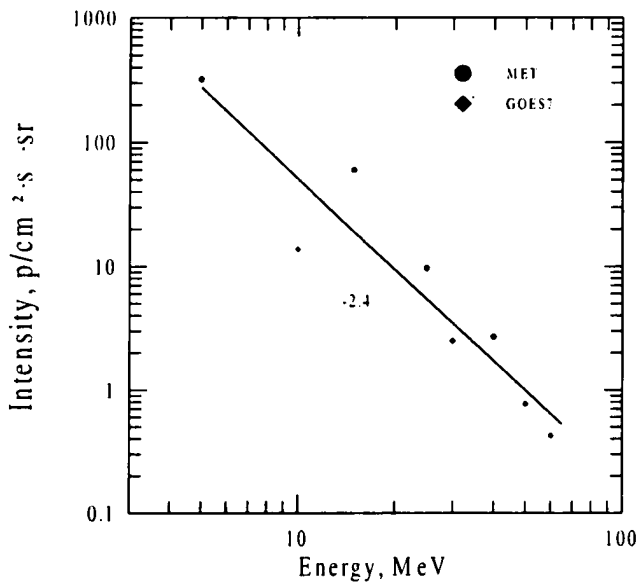


- Source: ■ active region AR 5629 is two days behind W-limb
 X-ray bursts C1.8 1638-1643, C8.2 1915-2130, and type II
 bursts 1542-1612, 1948-2006
 ○ flare 1911 N27 E02 1N AR 5645
 ▲ SC 21d1415

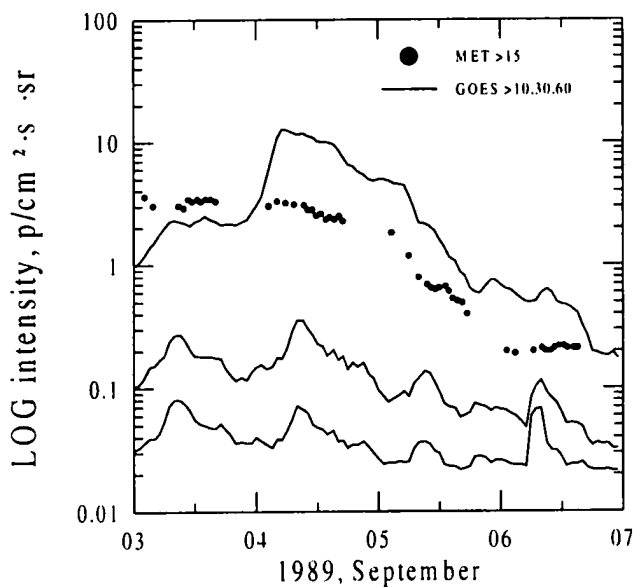
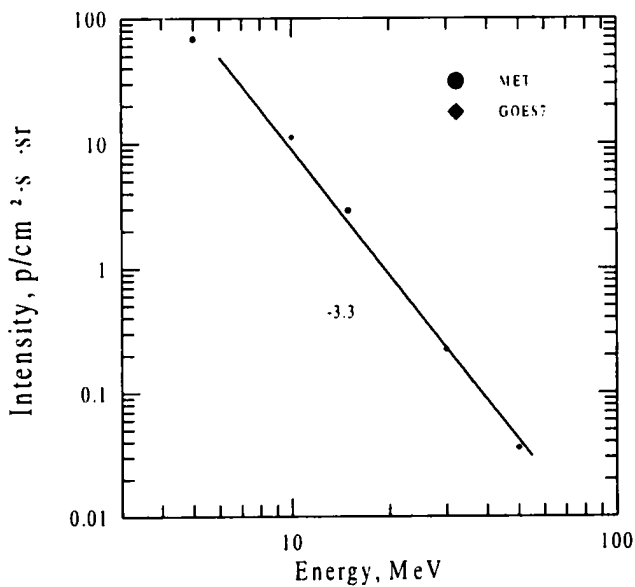


Source: ☐ active region AR 5629 is on the invisible hemisphere
a number of X-ray and type II bursts; no flare reported

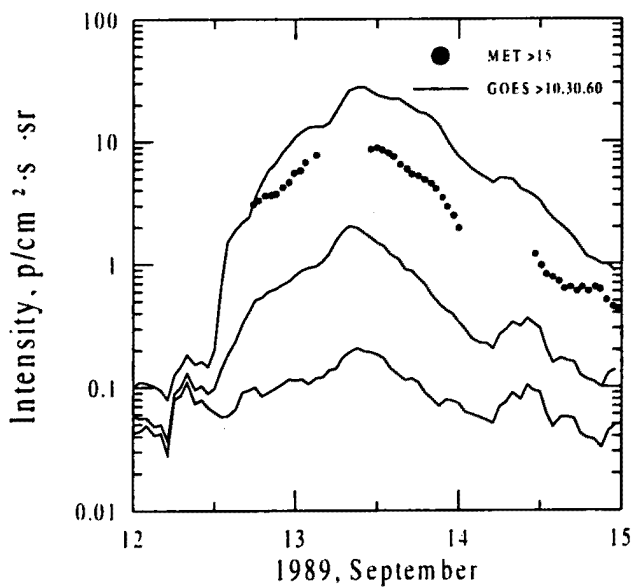
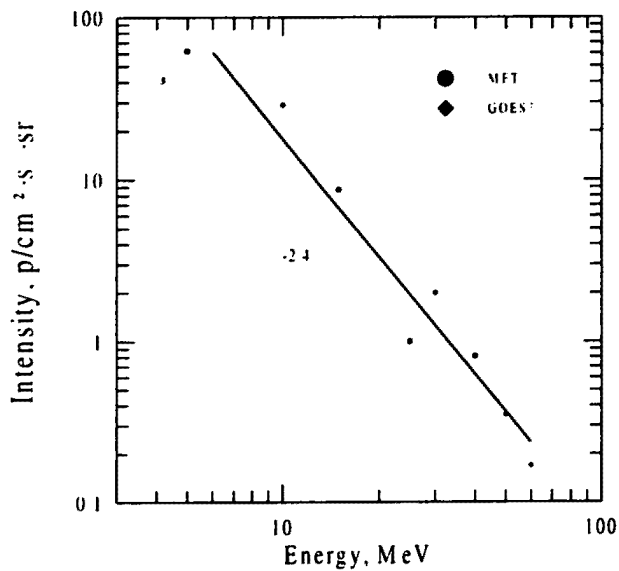
▲ SC 23d0047, 23d1427, 27d1337



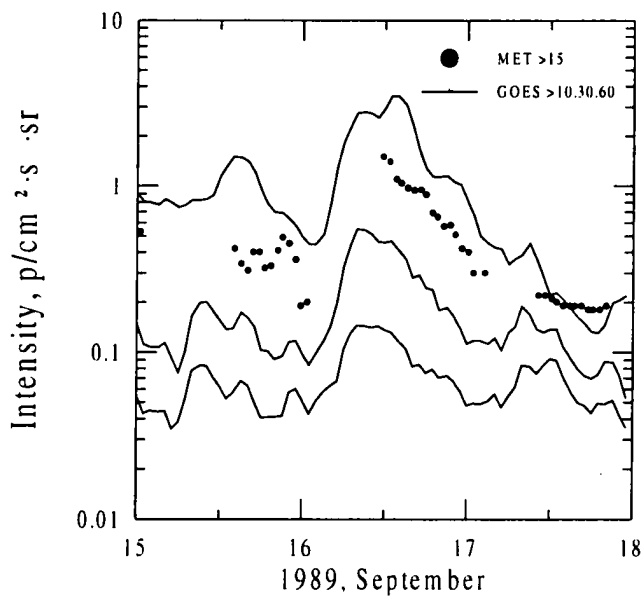
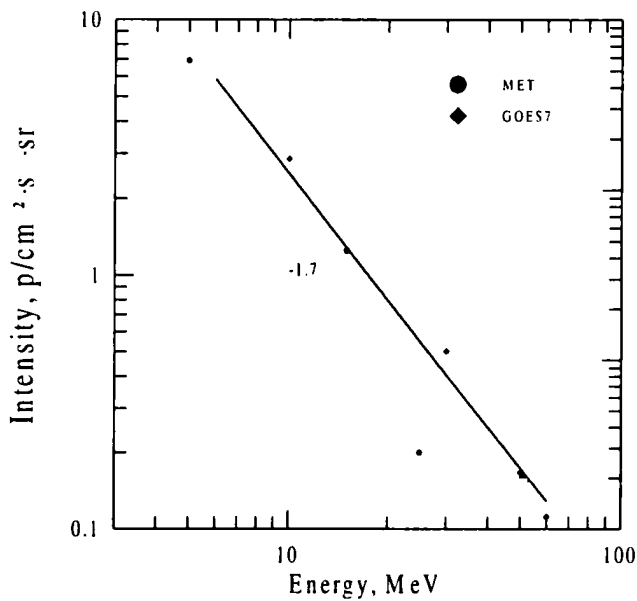
Source: ● flare 1428 S17 E19 1B AR 5669
 ○ flare 4d0857 S18 E20 1B AR 5669
 ▲ SC 4d0027



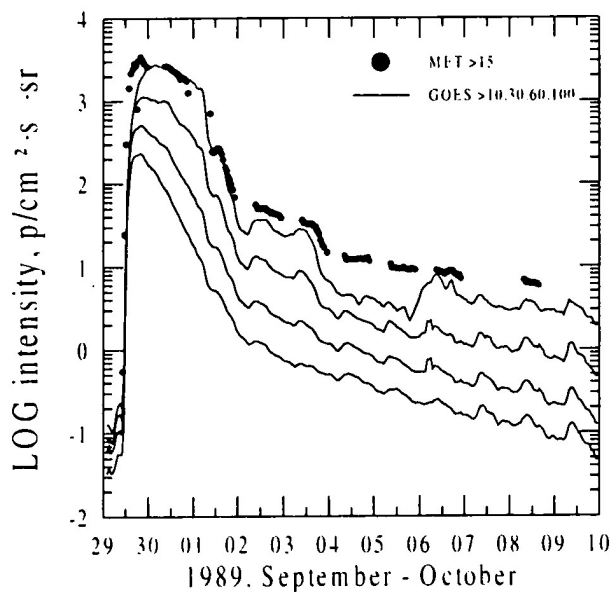
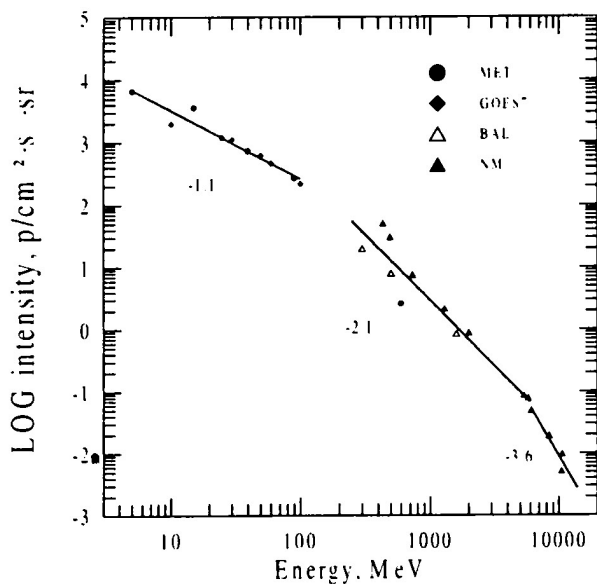
Source: \odot X-ray LDE burst M5.3 0435-1057
 \circ flare 13d0329 N17 E10 2N AR 5687
 \blacktriangle SC 1228.15d0047



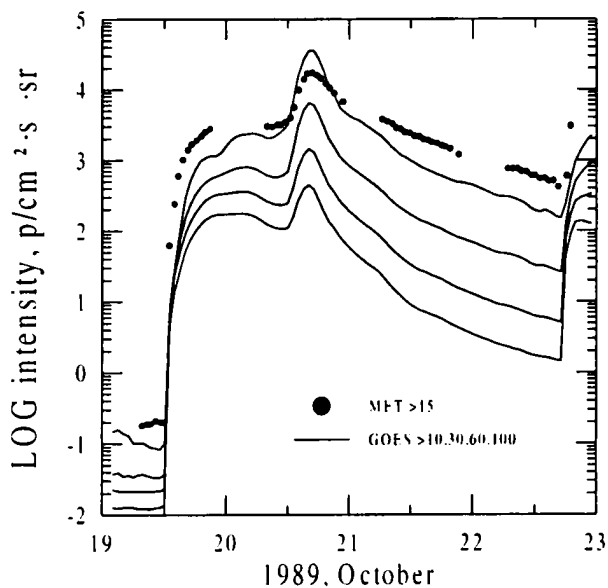
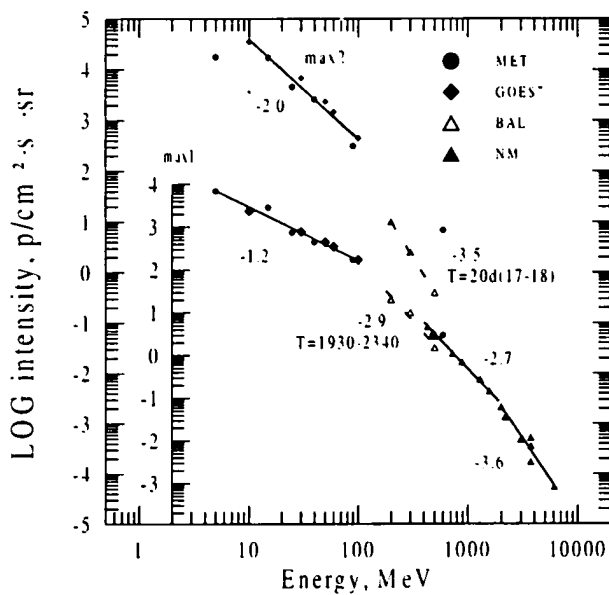
Source: ☉ flare 15d2230 N23 W24 1F AR 5690
 ▲ SC 17d0743



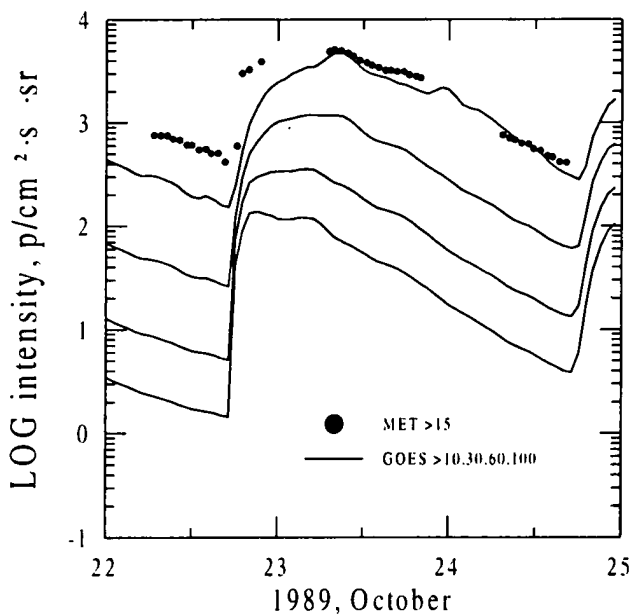
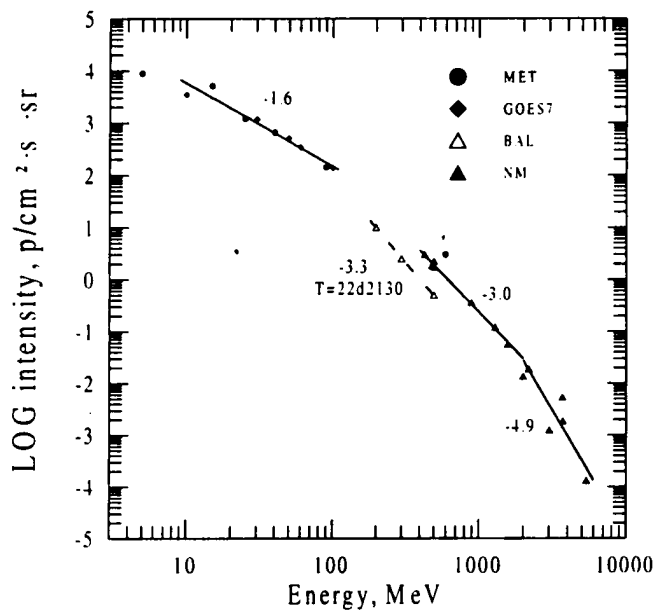
Source: ■ flare <1000 S32 W90 2N AR 5698
 activity of the region AR 5698 on the invisible hemisphere
 ▲ SC 30d1716, 2d0339



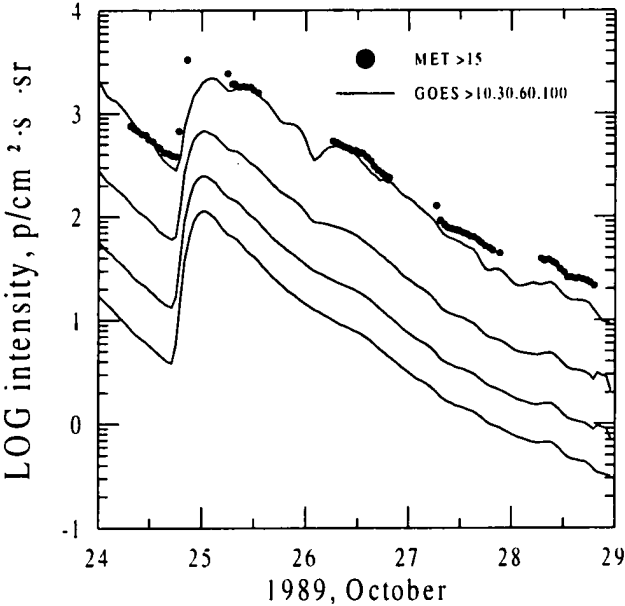
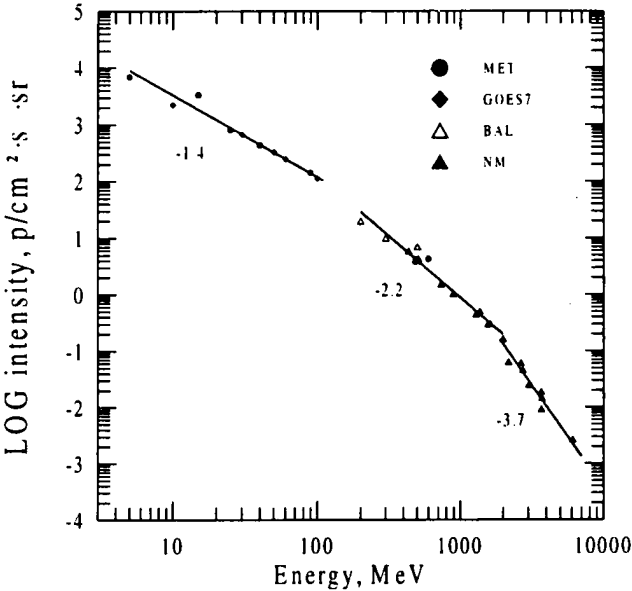
Source: ● flare 1229 S25 E09 3B AR 5747
 ▲ SC 18d0050, 20d0916



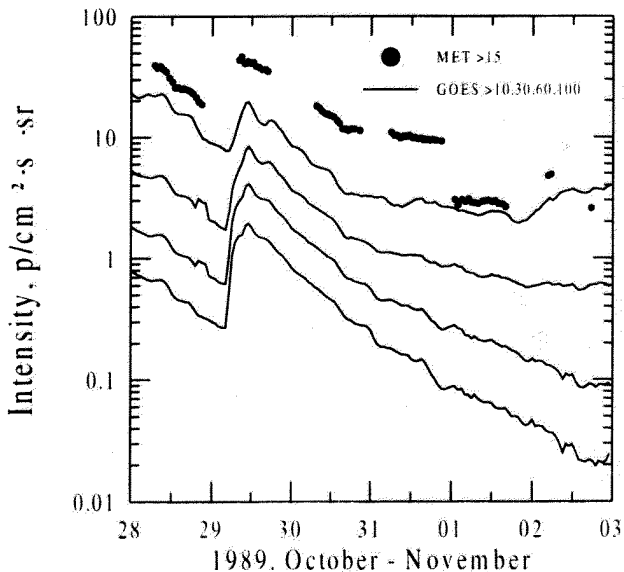
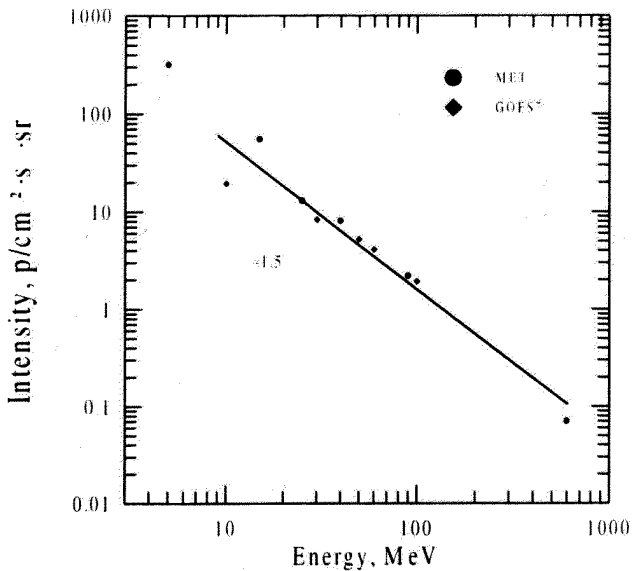
Source: ● flare 1708 S27 W32 1N AR 5747



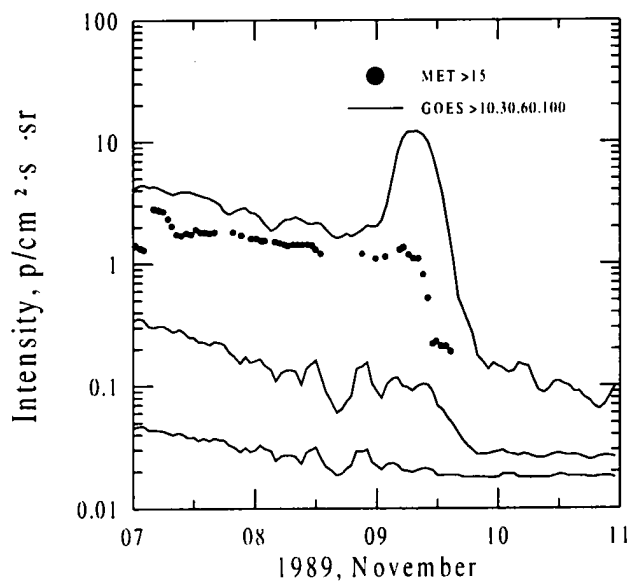
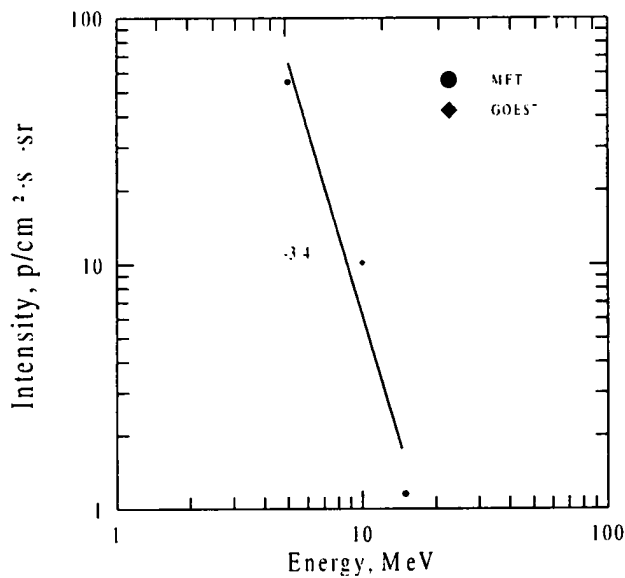
Source: ● flare 1738 S29 W57 2N AR 5747
▲ SC 26d1427



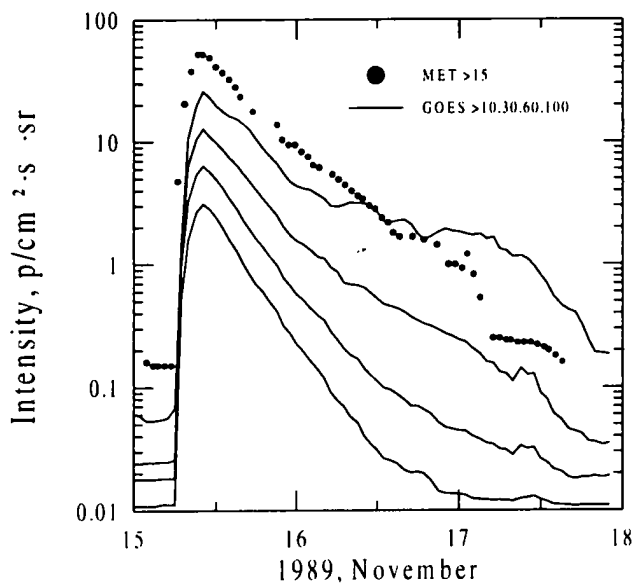
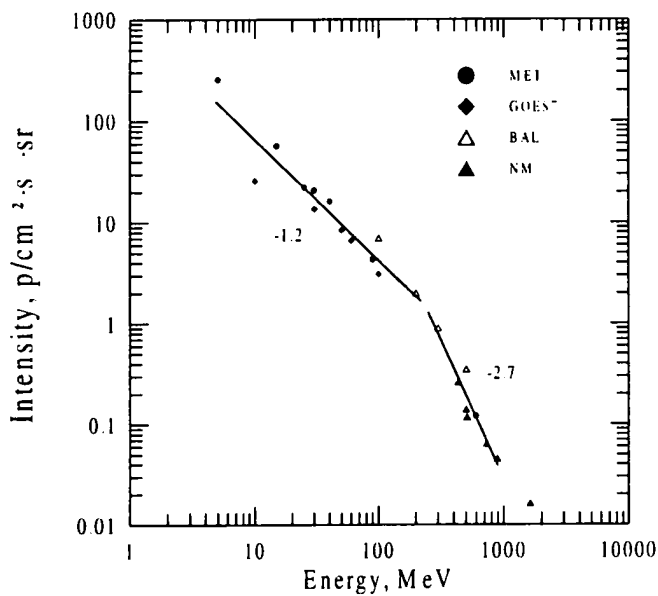
Source: □ active region AR 5747 beyond W-limb
 X-ray burst M4.0 0221-0617, and type II burst
 0203-0214: no flare reported
 ▲ SC 2d0036



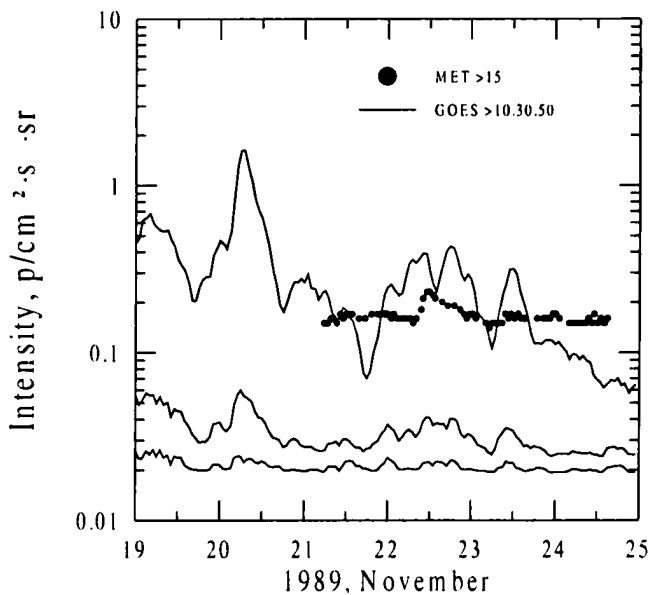
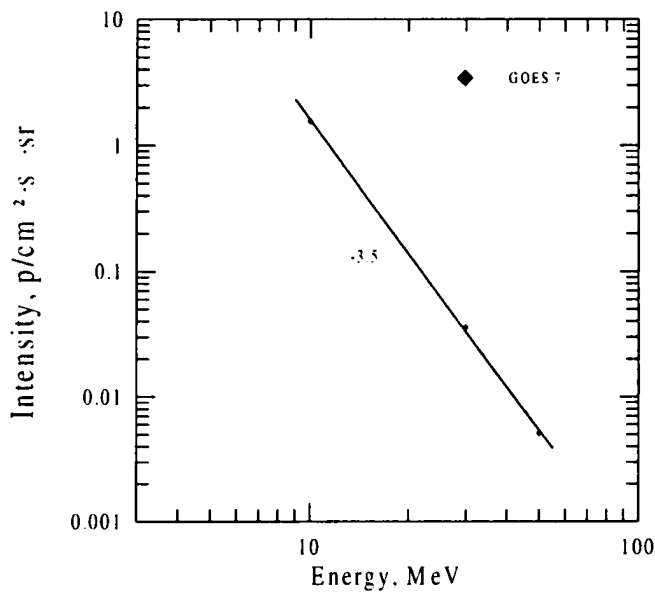
Source: \odot flare 8d1856 N20 W55 2B AR 5769
 \oslash flare 8d1818 N14 E12 1N AR 5782
 \blacktriangle SC 0054



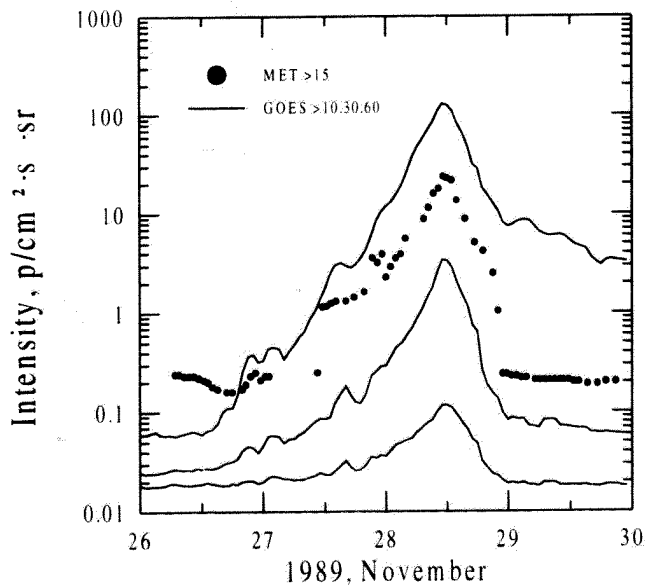
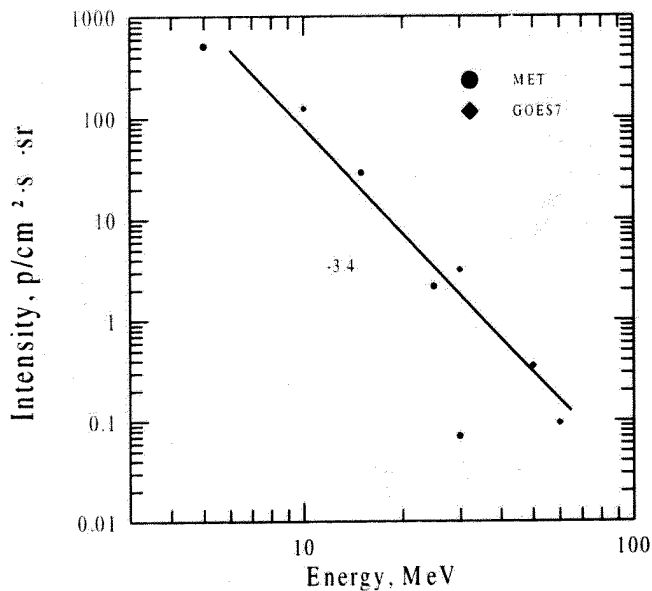
Source: ● flare 0638 N11W28 2B AR 5786
 ▲ SC 17d0925



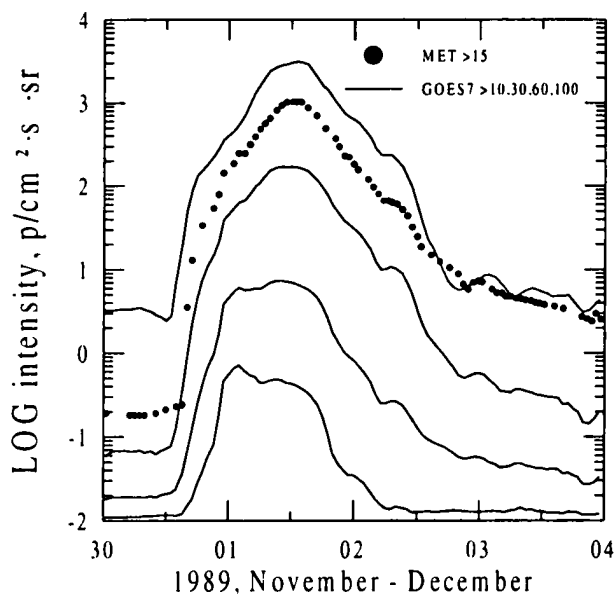
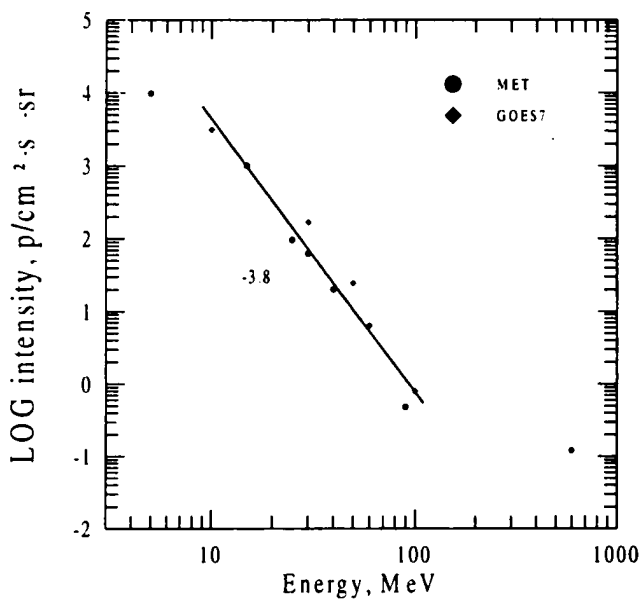
Source: ☉ flare 0033 S27 W33 SN AR 5793
activity of the region AR 5793 during November, 16-23



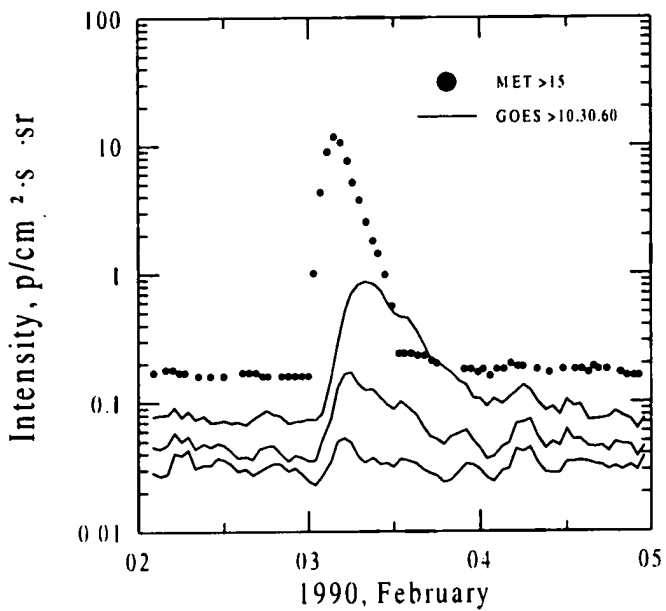
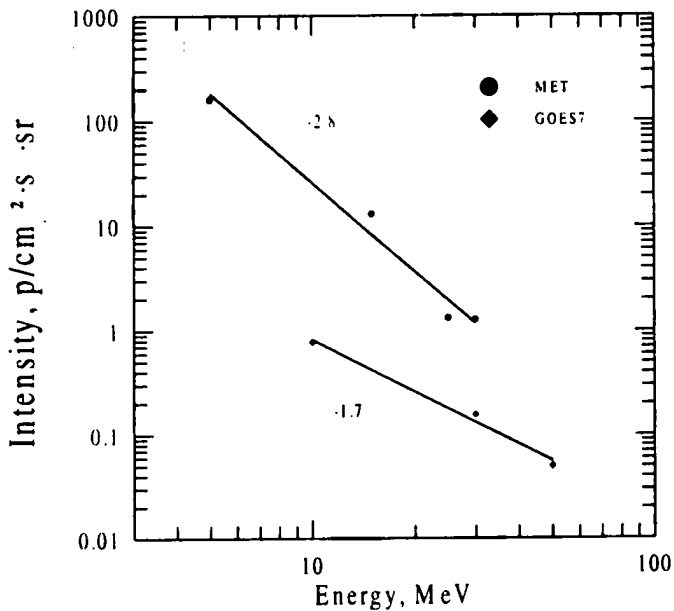
Source: ○ flare 1749 N25 W03 2B AR 5800
 ○ flare 27d1702 N21 W63 1N AR 5799
 ▲ SC 27d2139, 28d0742



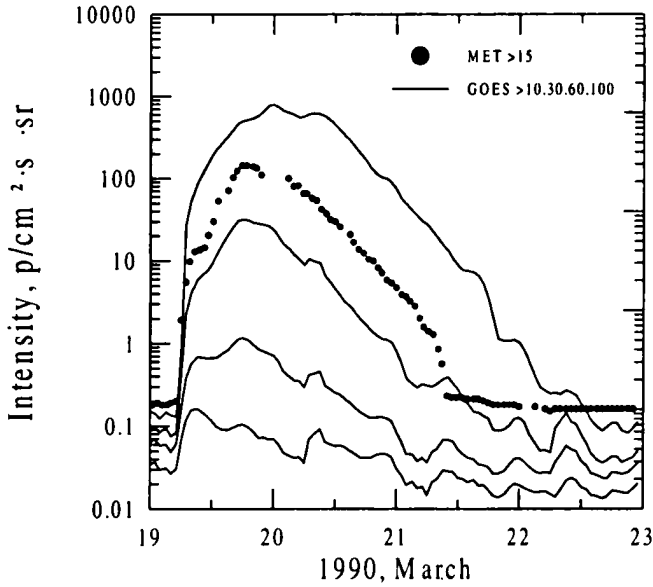
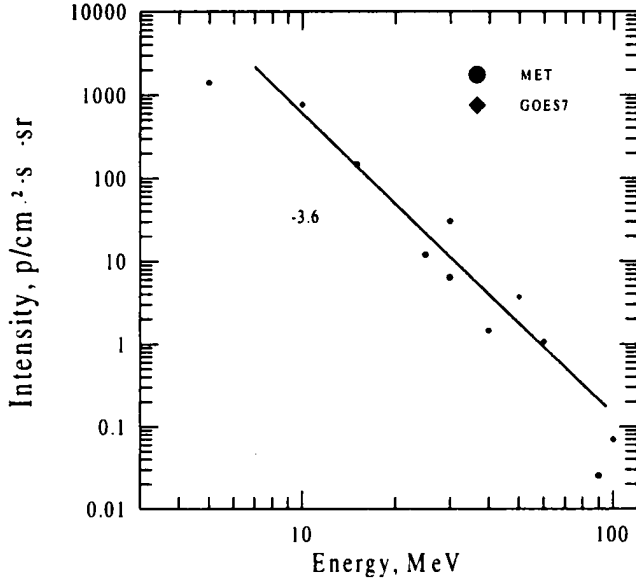
Source: ● flare 1145 N25 W52 2N AR 5800
 ▲ SC 1d1749



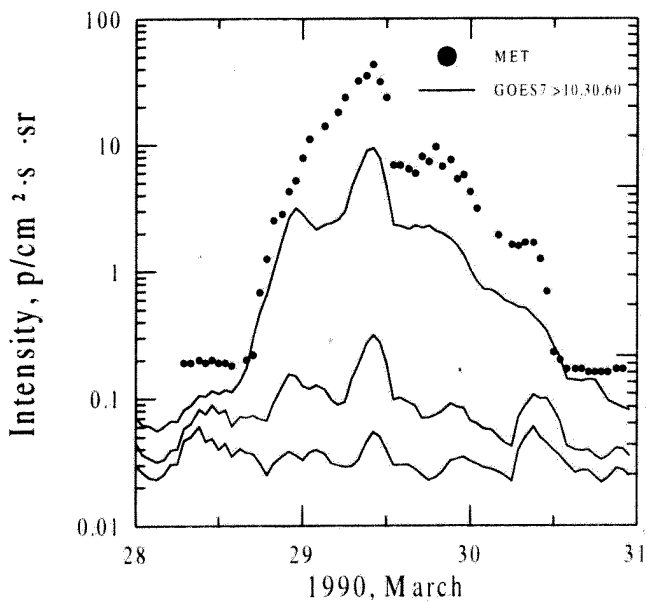
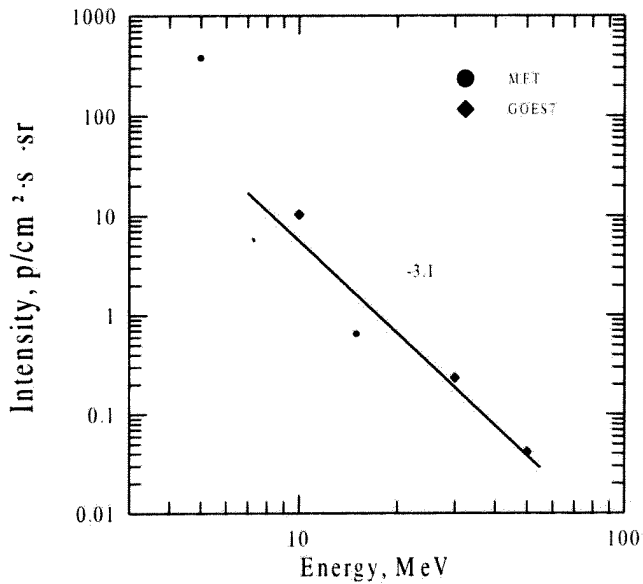
Source: ● flare 0108 S12W79 1N AR5917



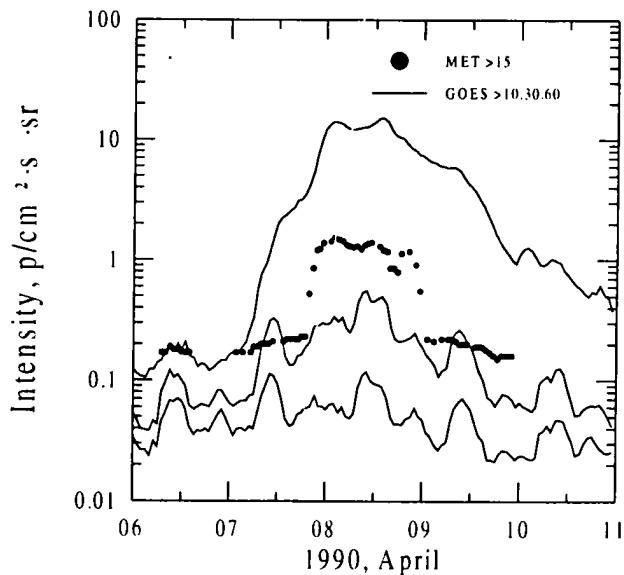
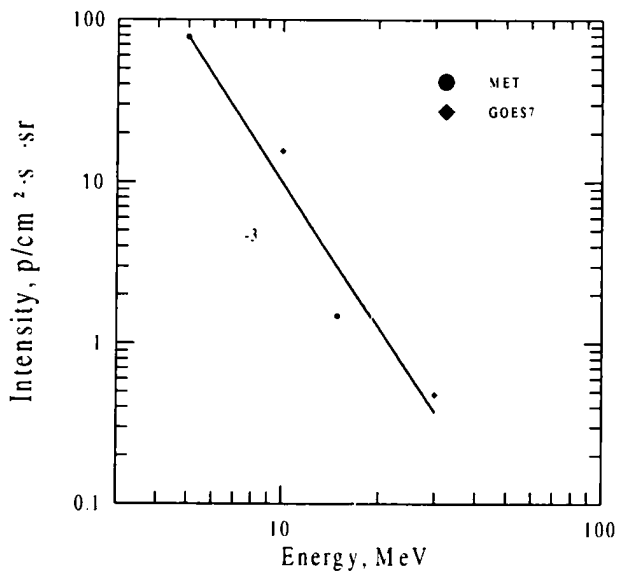
Source: ● flare 0438 N33 W39 1N AR5969
 0334 N31 W40 SF AR5969
 ▲ SC 20d2243



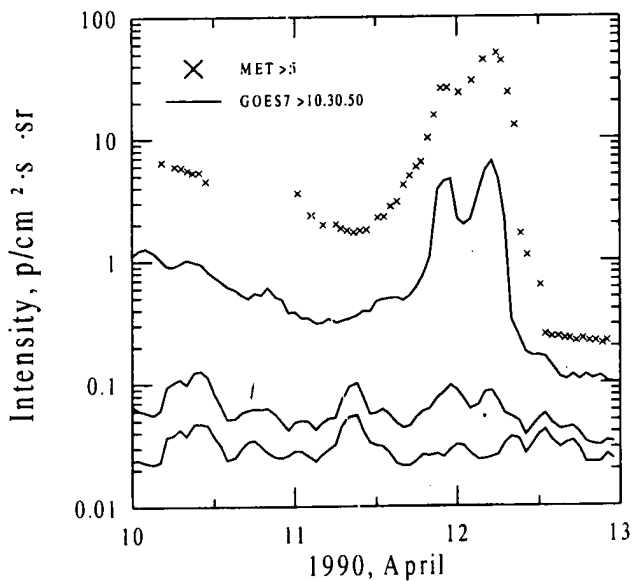
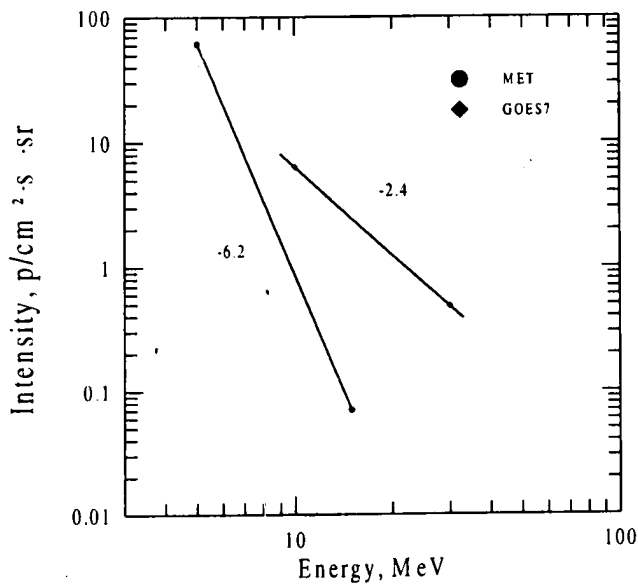
Source: ○ flare 0727 S05 W35 2N AR 5988
 ○ flare 29d0827 S32 W60 SF AR 5983
 ▲ SC 30d0720



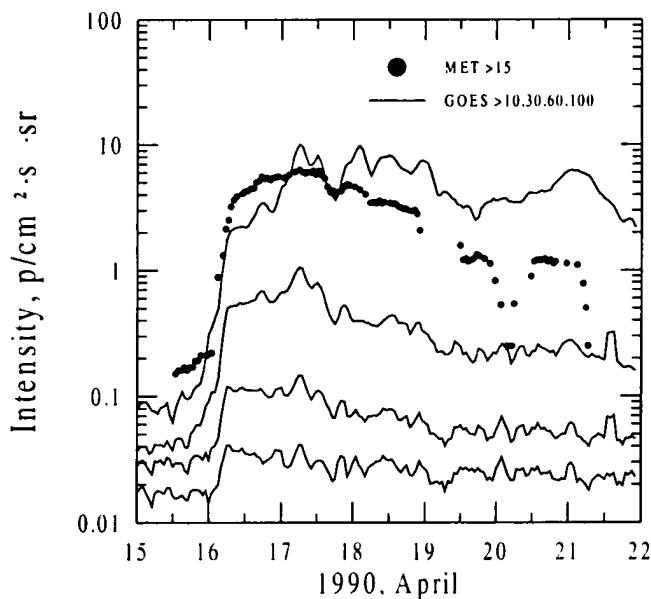
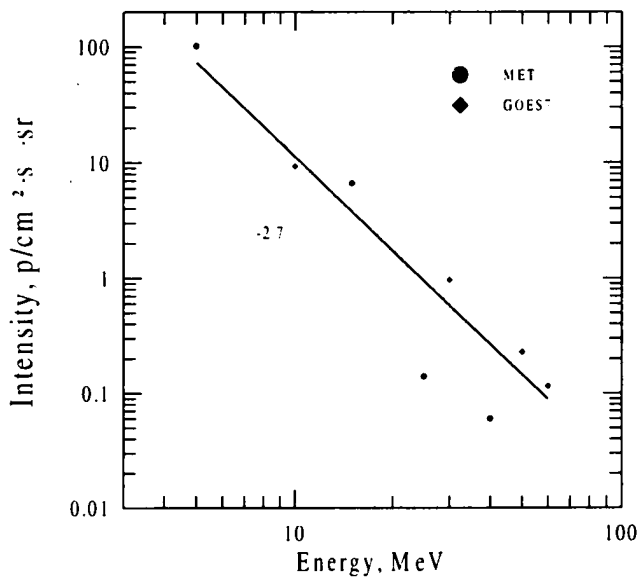
Source: ○ flare 6d0618 N25 E50 1N AR 6007
 ○ flare 1511 N31 E62 SF AR 6012
 ○ flare 8d0344 N24 E28 2N AR 6007
 ▲ SC 9d0843



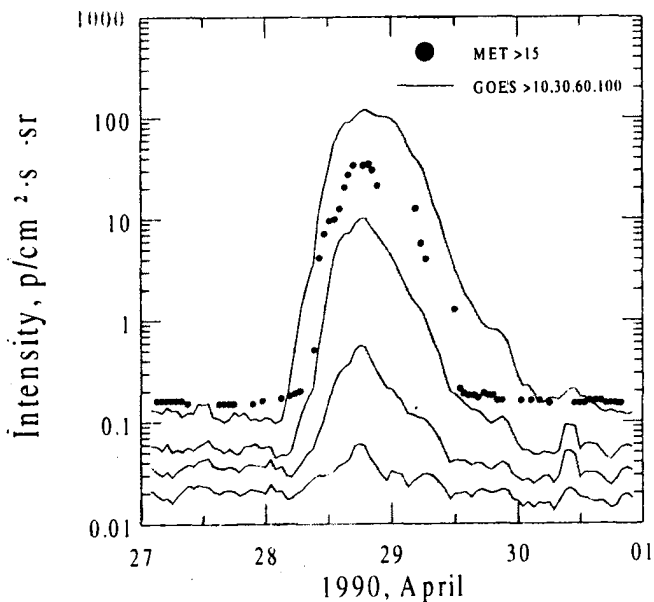
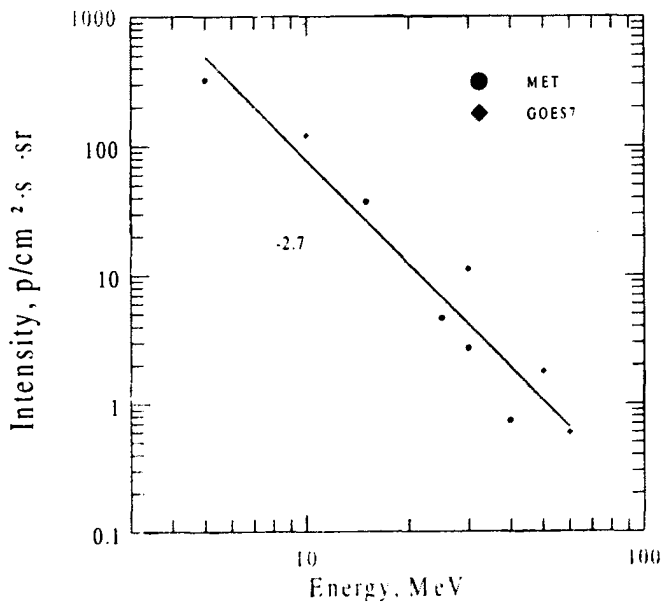
Source: ○ flare 10d1144 N24 W04 1N AR 6007
 type II burst 0748-0758, no flare reported
 ▲ SC 12d0326



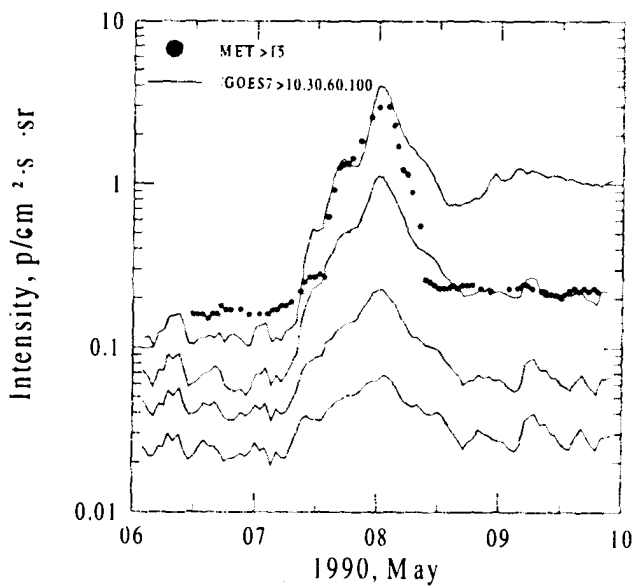
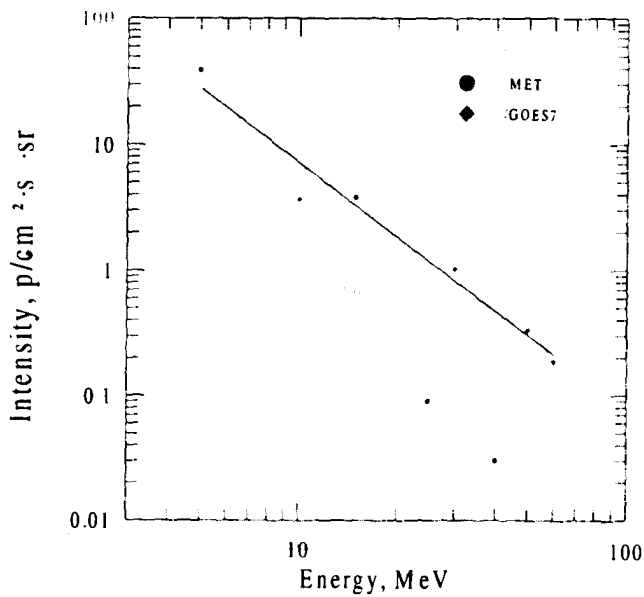
Source: ● flare 0230 N32 E54 2B AR 6022
 ○ flare 16d0630 S12 E46 2B AR 6021
 ▲ SC 17d0719, 20d1801



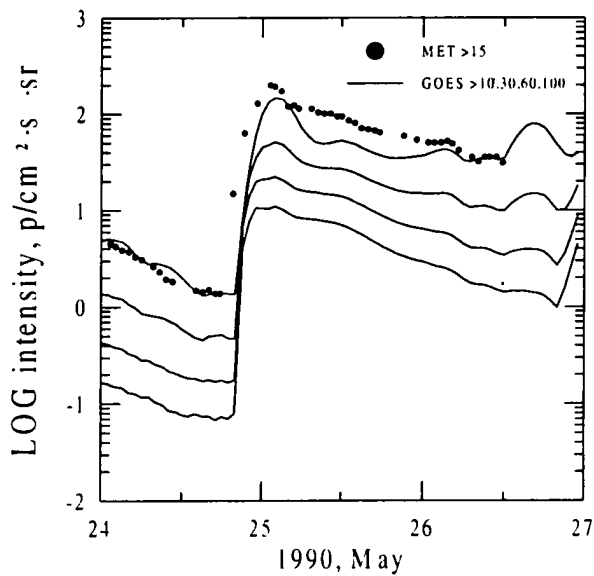
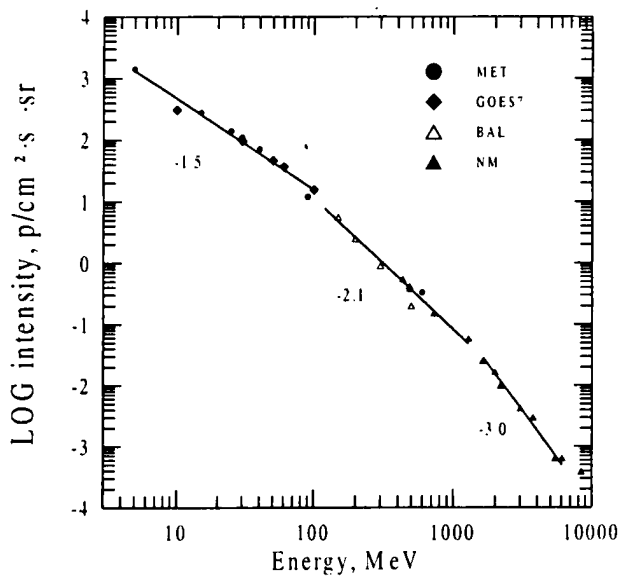
Source: ☐ prolonged type II burst 0024-0050, possibly activity behind W-limb: active region AR 6022 ~2 days behind W-limb



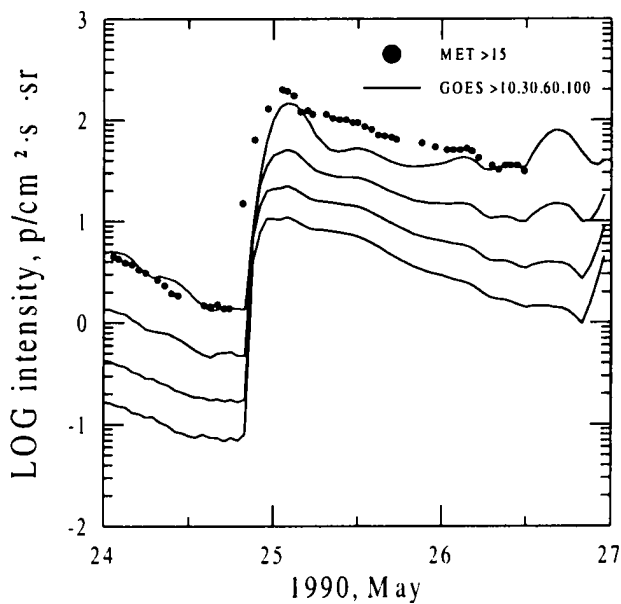
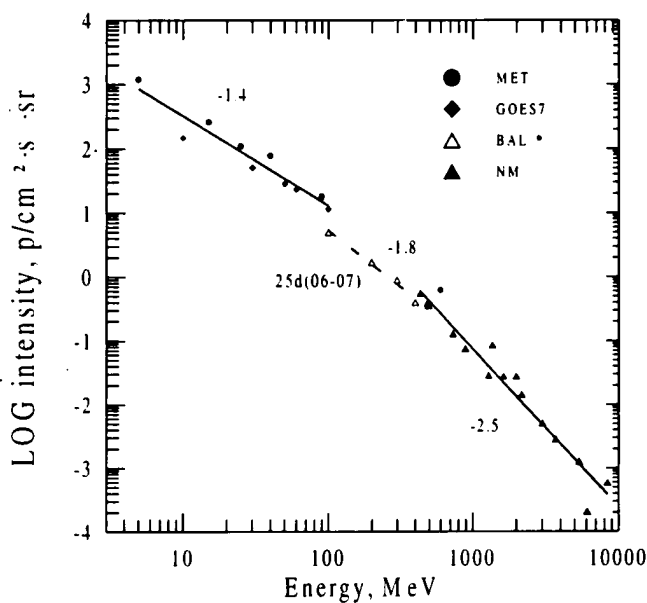
Source: activity of region AR 6063 beyond E-limb
 ▲ SC 9d1843



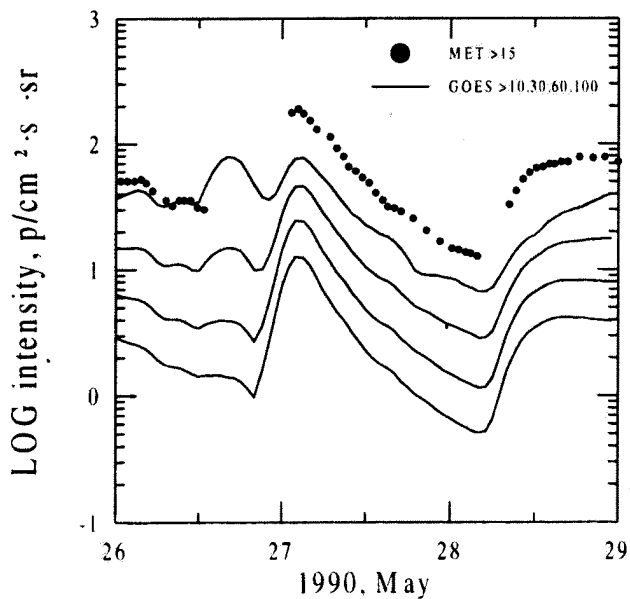
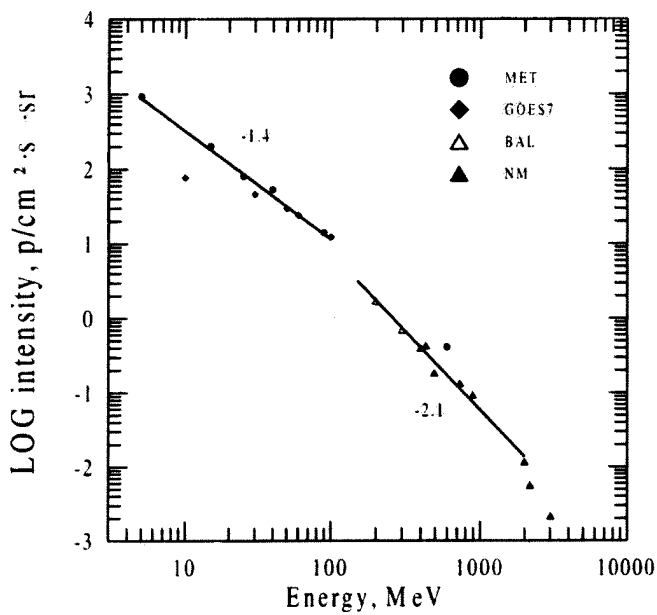
Source: ● flare 2212 N34 W37 2B AR 6063
 ○ flare 22d0004 S15 W43 1N AR 6064
 ▲ SC 1021



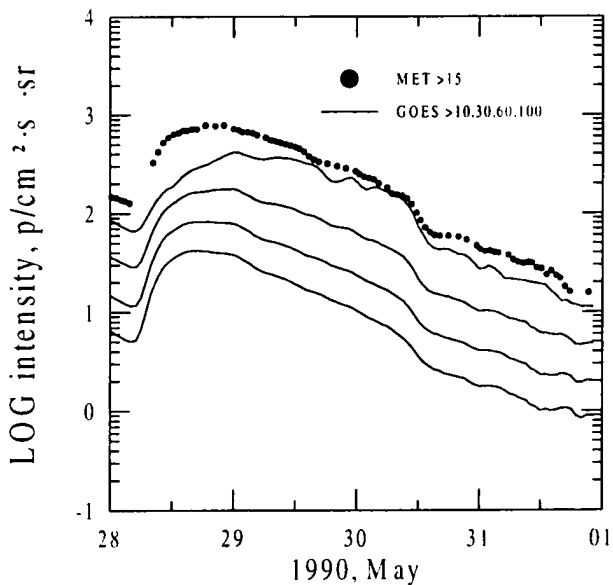
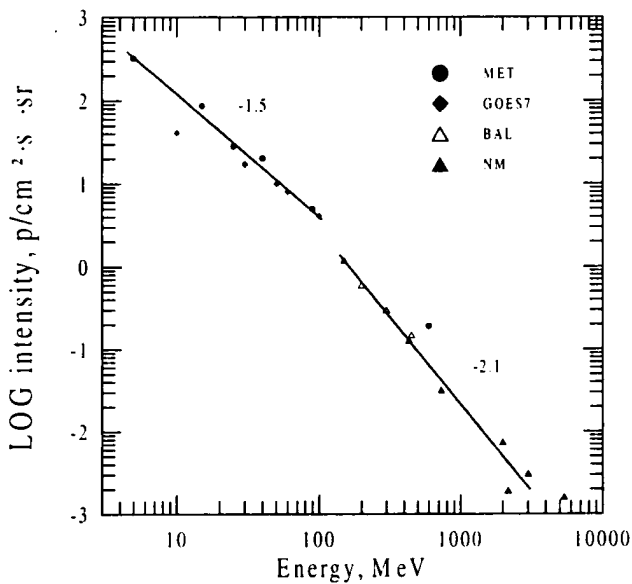
Source: ● flare 2046 N36 W76 1B AR 6063
 ▲ SC 25d0510, 26d2037



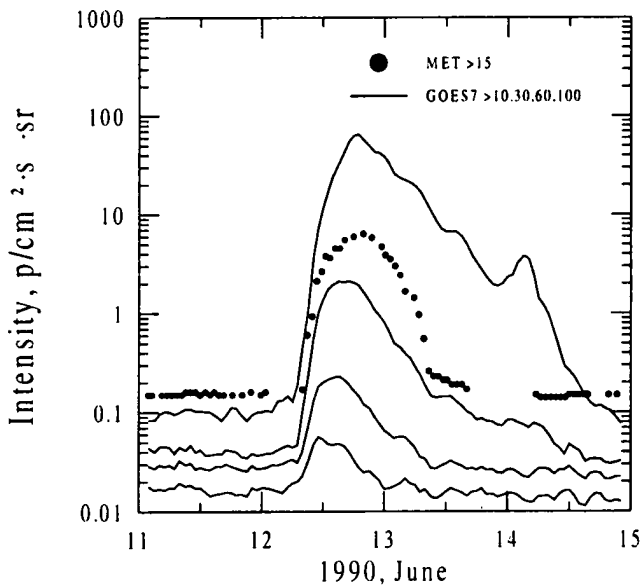
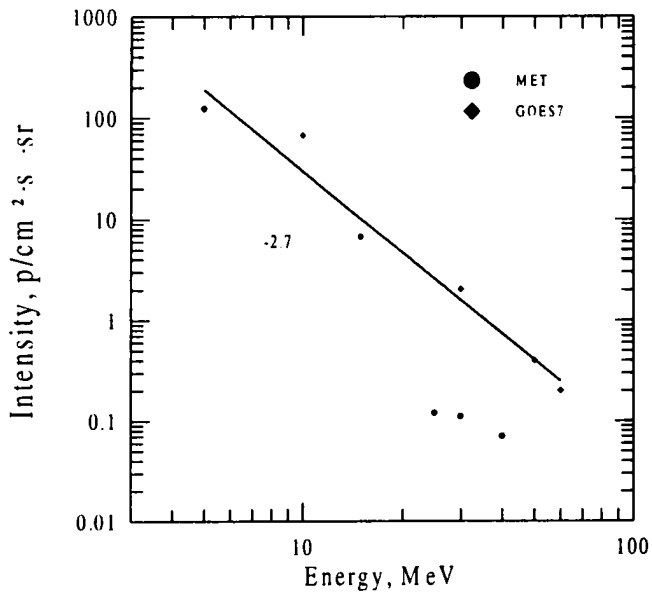
Source: ■ active region AR 6063 beyond W-limb (~W110)
X-ray burst X1.4 2045-2133



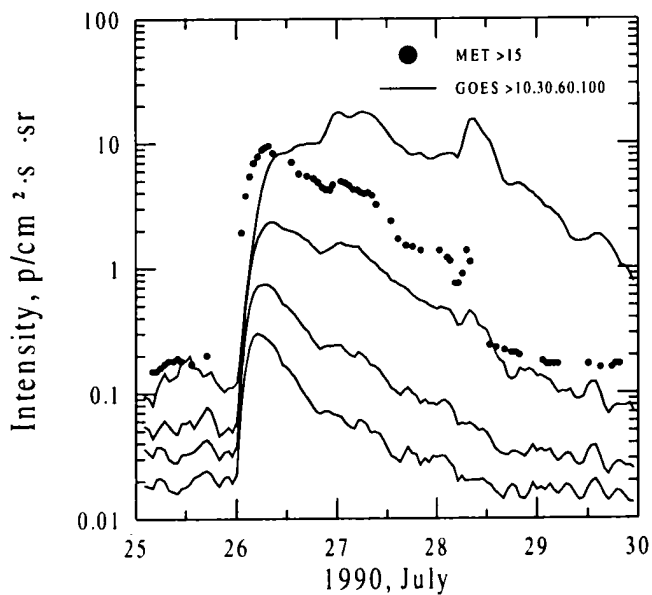
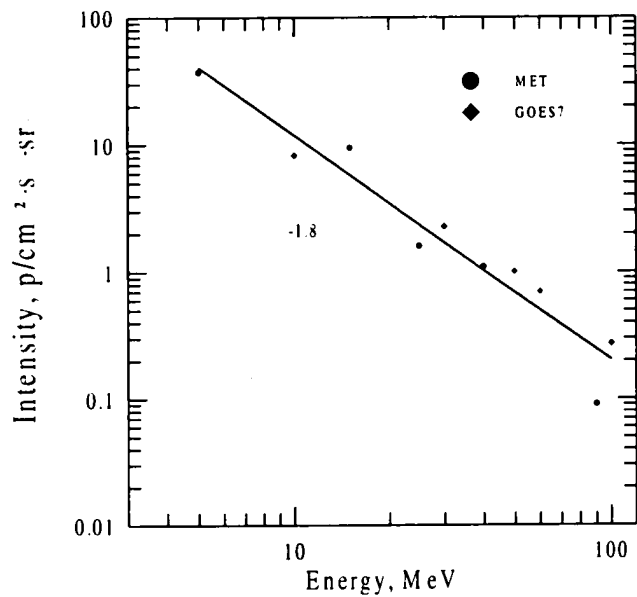
Source: ● active region AR 6063 2.5 days behind W-limb
 type II burst 0430-0452 and type IV burst 0428-0457, no
 flare reported
▲ SC 30d0904



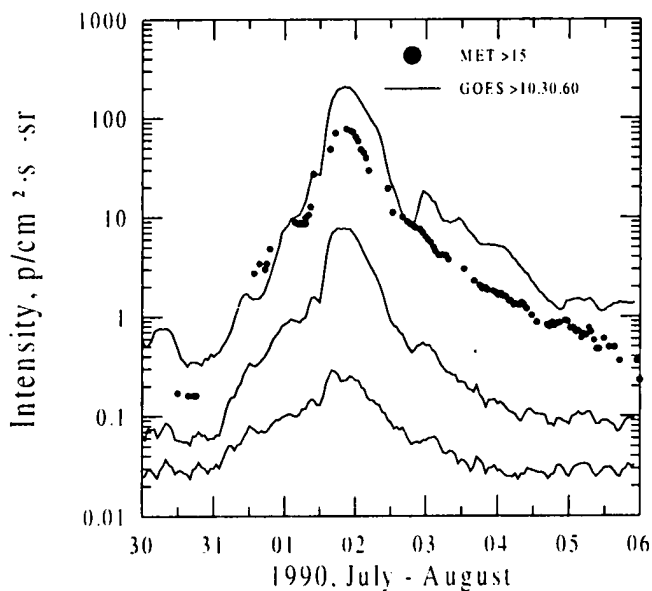
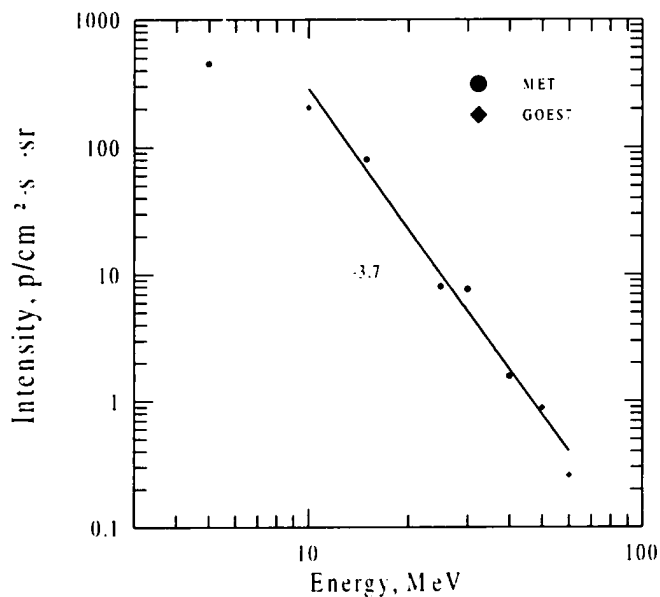
Source: ● flare 0429 N10 W32 2B AR 6089
 ▲ SC 0820, 13d1415, 14d0310



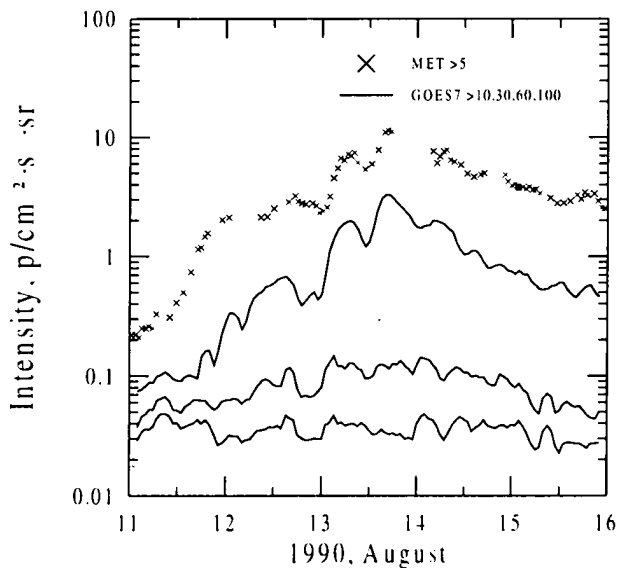
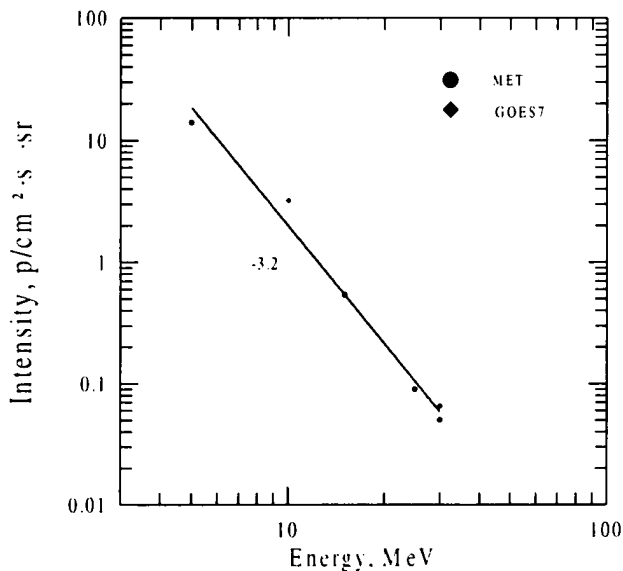
Source: ● flare 2221 S14 E56 2N AR 6174
 ▲ SC 28d0108, 28d0331



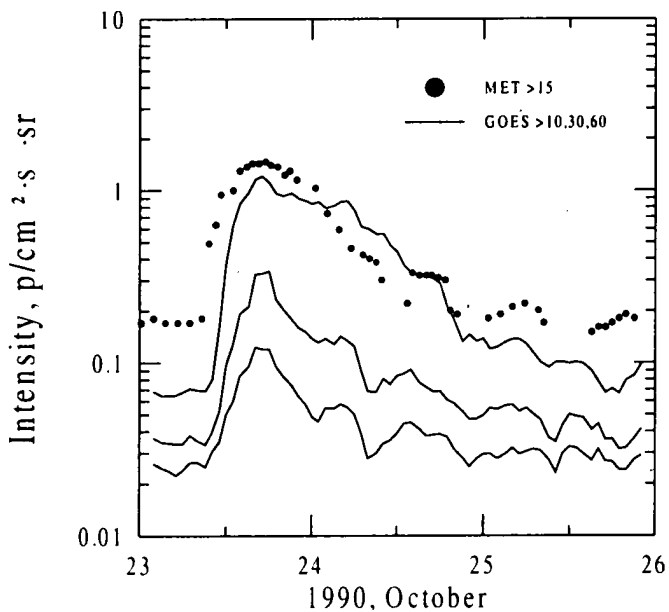
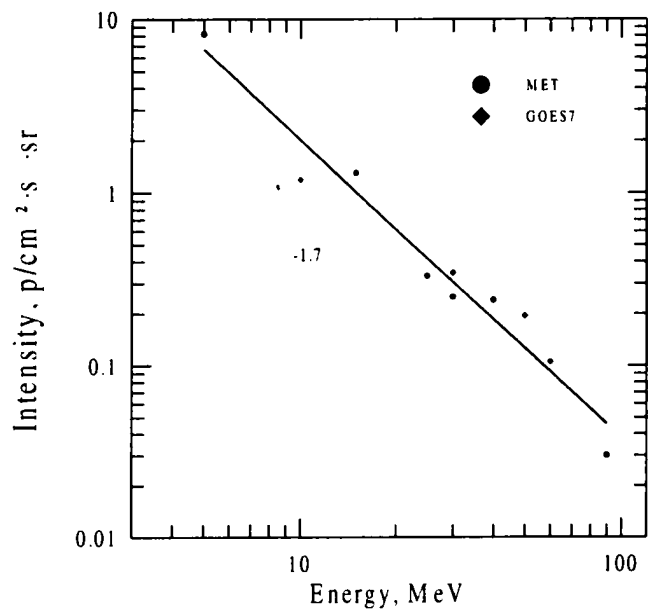
Source: ● flare 0632 N18 E42 2N AR 6180
 X-ray burst C7.0 1d(0923-0953)
 ▲ SC 1d0741



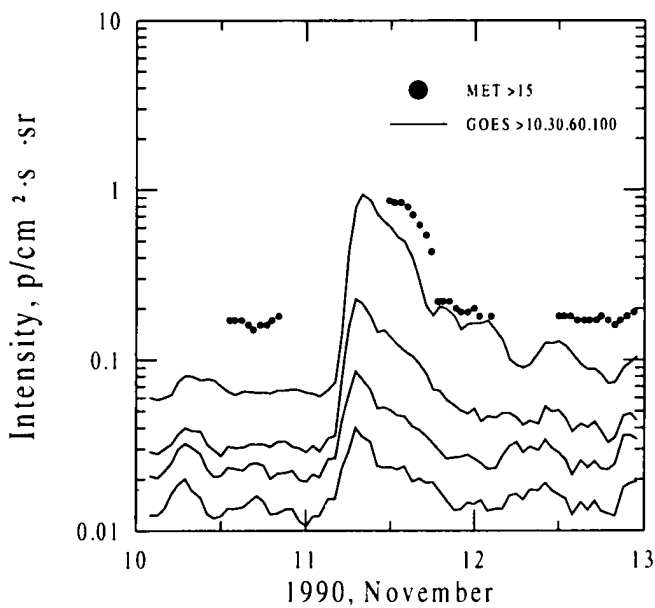
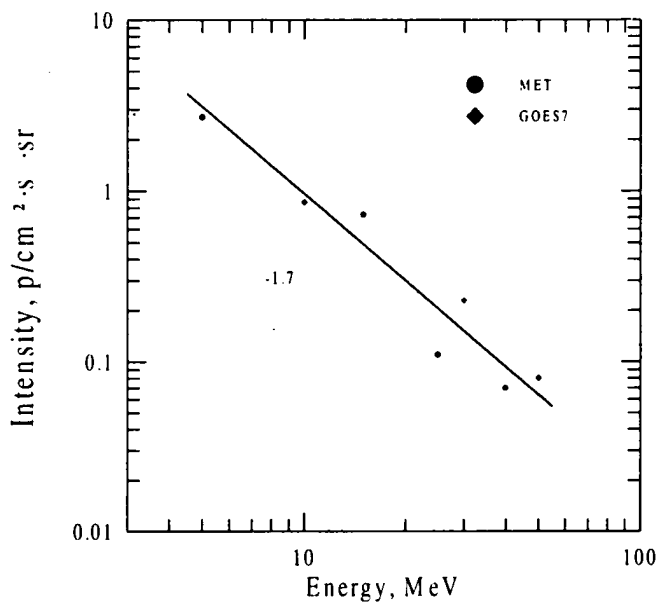
Source: ⊙ flare 10d1743 N19E73 2B AR6203
 ⊙ flare 13d0921 N14E18 1F AR6199
 ⊙ flare 13d1312 N15E00 1B AR6197
 ▲ SC 13d1027



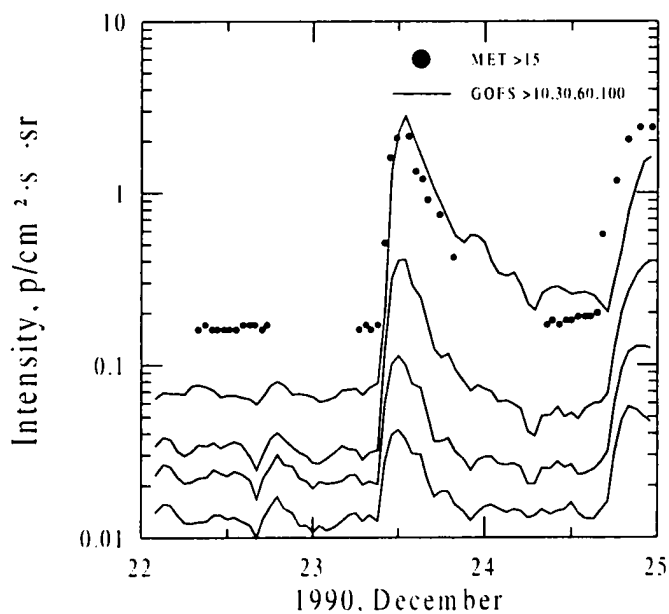
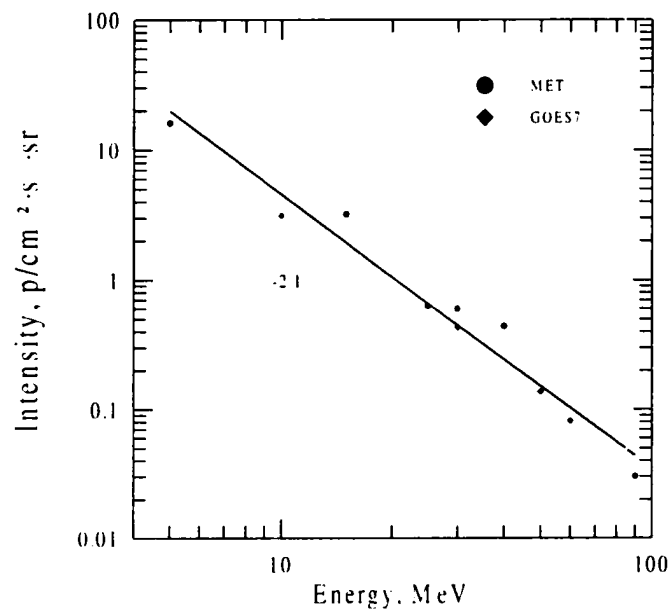
Source: ○ flare 0804 S37 E11 SN AR 6327A
 ○ flare 0829 N19 E27 SN AR 6331A



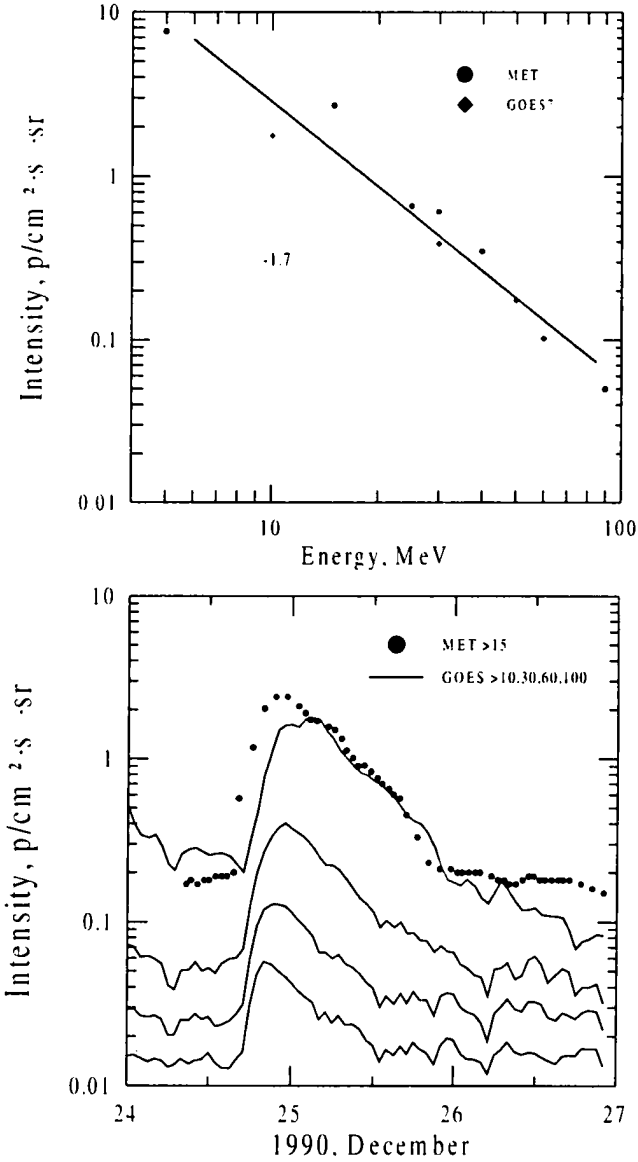
Source: ○ flare 10d1154 N06 E17 2B AR 6361
 ○ flare 0551 N05 E07 SN AR 6359B



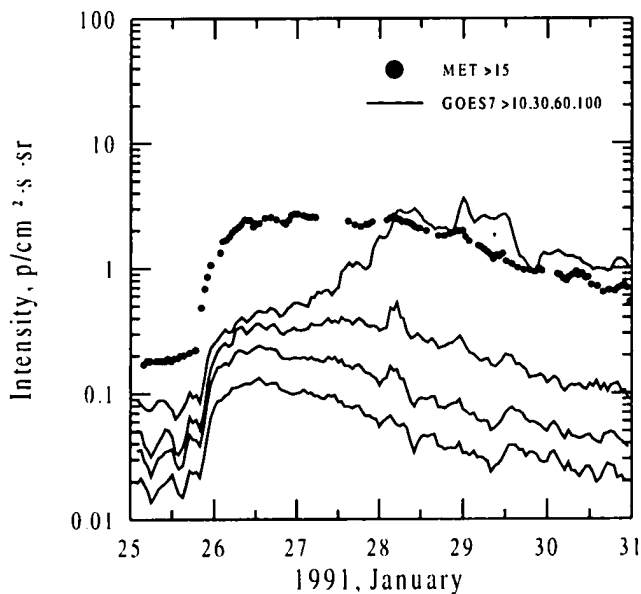
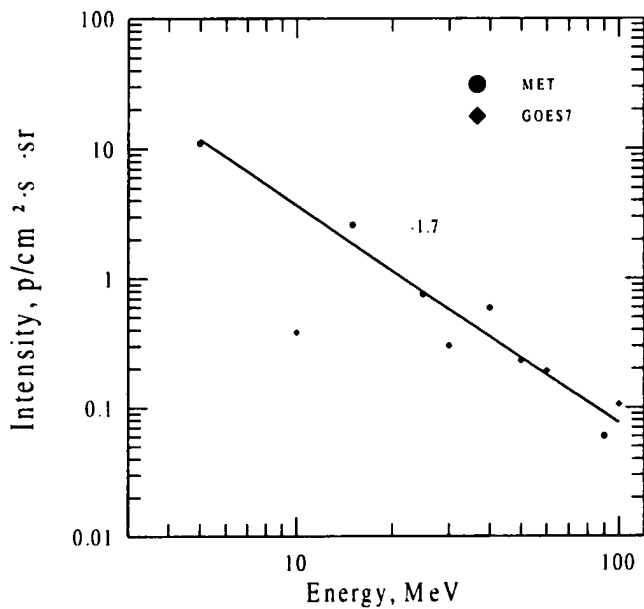
Source: ● flare 0943 N12 W70 2B AR 6412



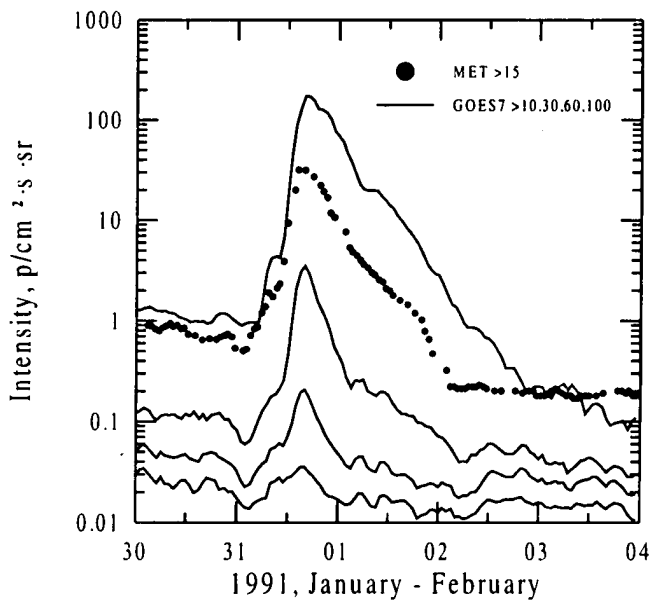
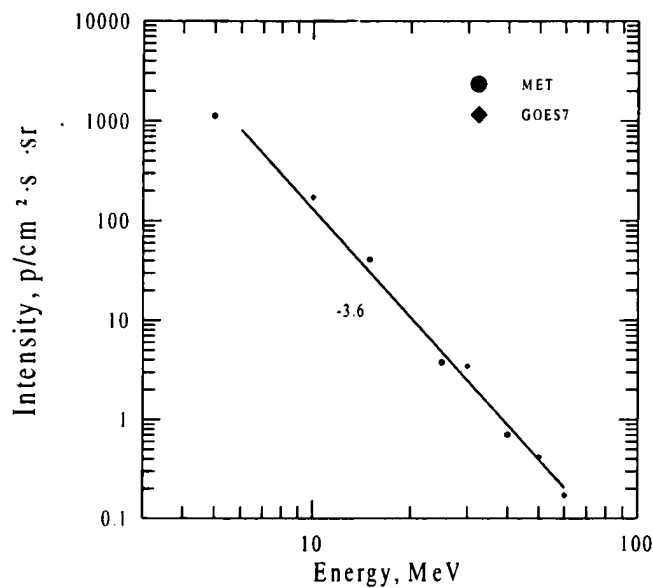
Source: ● flare 1533 N10 W80 1B AR 6412
○ flare <1322 S24 E47 1F AR 6420
no flare patrol 1331-1417



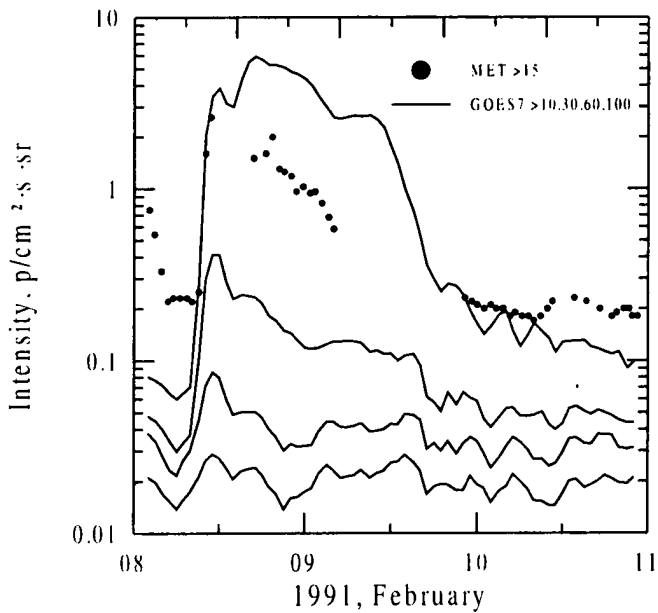
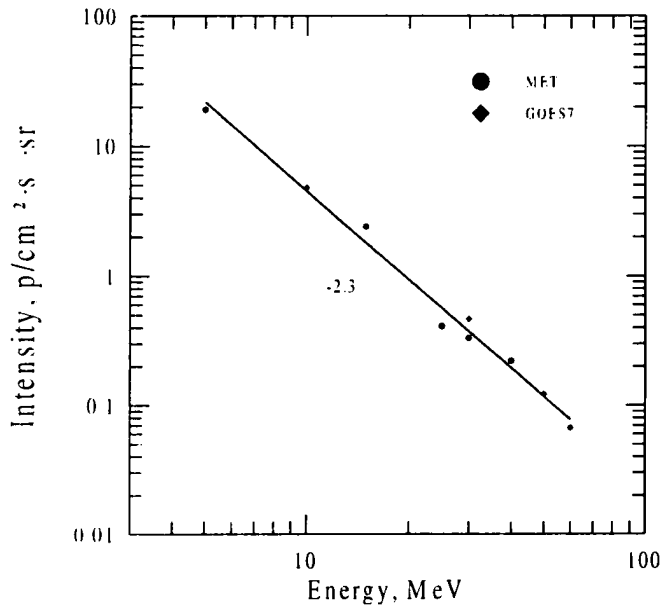
Source: ● flare 0623 S12 E90 1B AR 6471
 0630 S16 E78 SF AR 6475
 Ø flare 27d1440 S13 E59 1B AR 6471



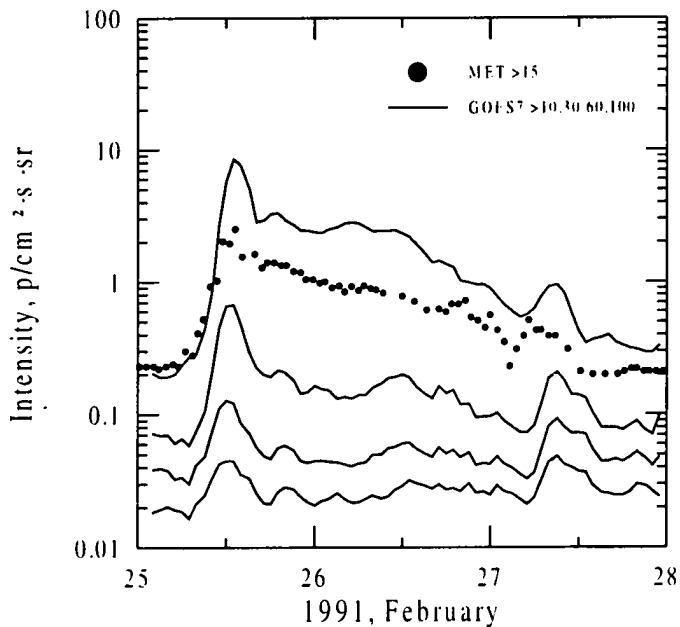
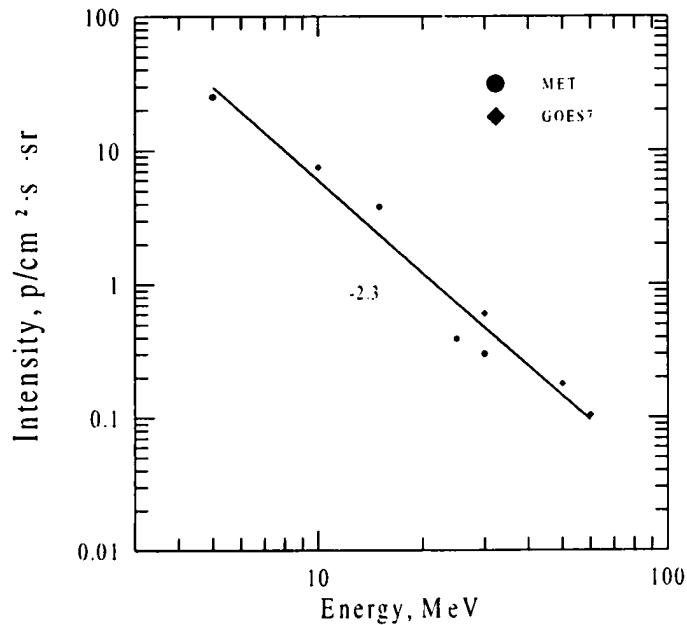
Source: ● flare 0157 S17 W35 2B AR 6462
 ▲ SC 1d1842



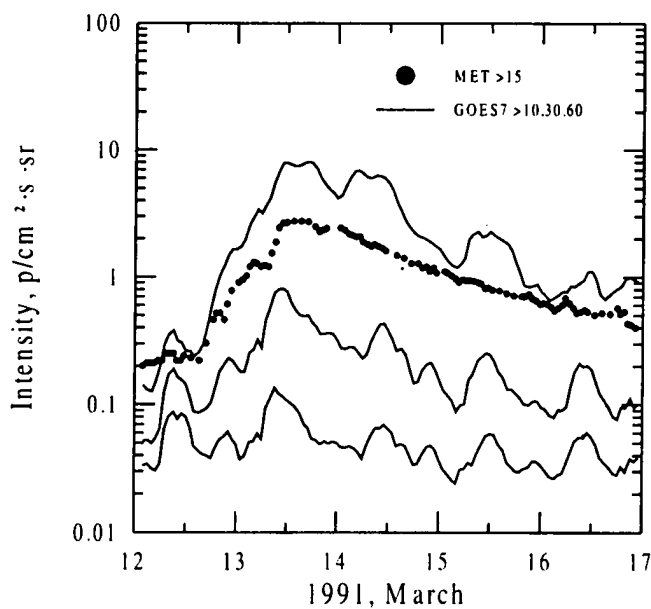
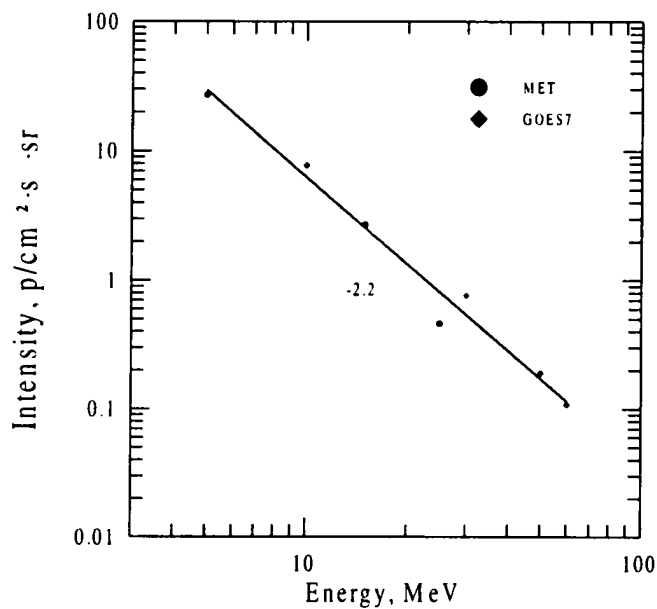
Source: ☉ flare 0524 N14 E34 1F AR 6487



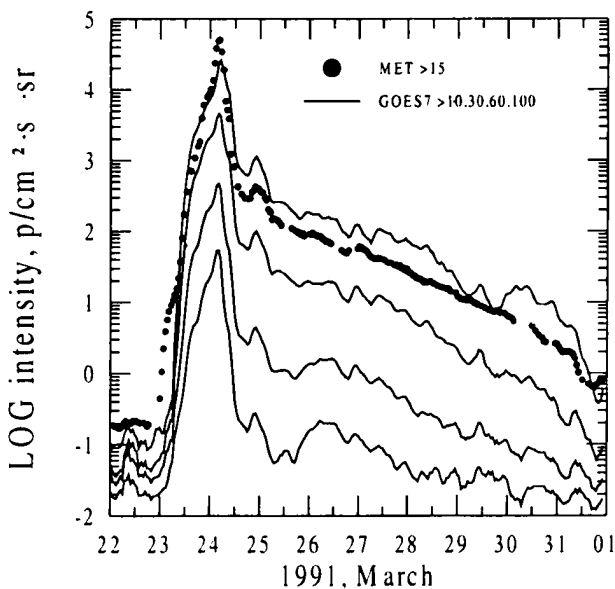
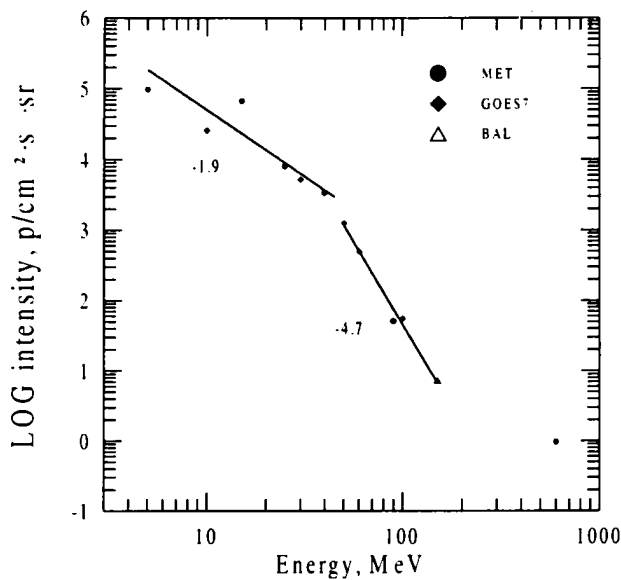
Source: ● flare 0809 S15 W82 2N AR 6497



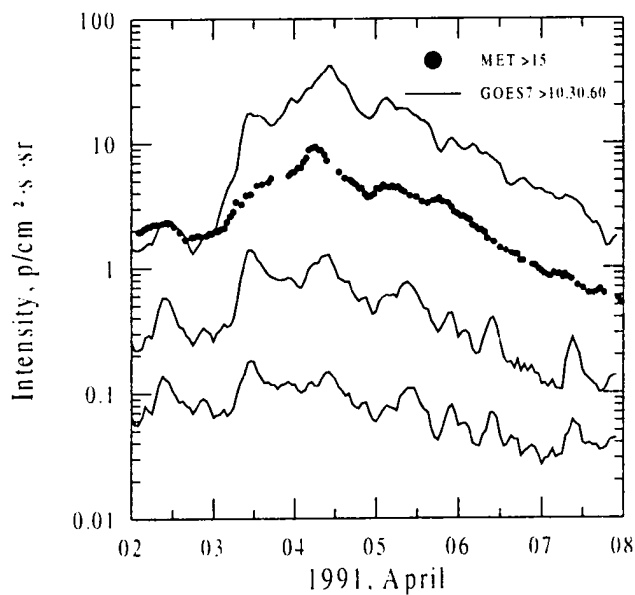
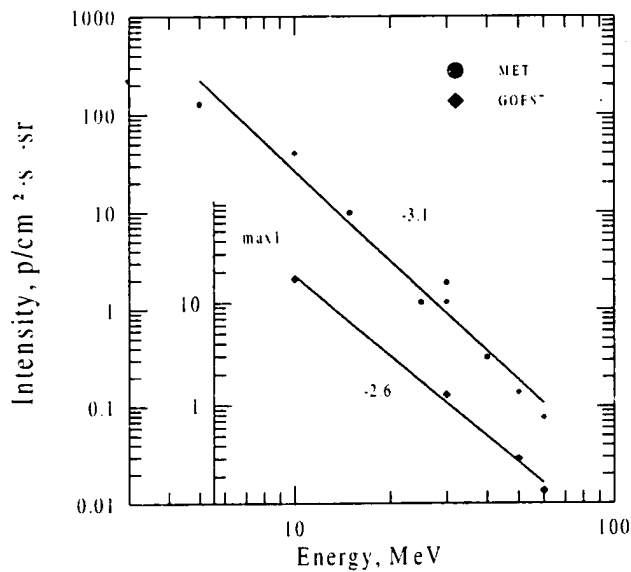
Source: ● flare 1228 S08 E58 1N AR 6545
▲ SC 0453, 16d1559



Source: ● flare 2243 S26 E28 3B AR 6555
 ○ flare 23d0219 S21 E13 2B AR 6555
 ▲ SC 24d0147, 24d0341

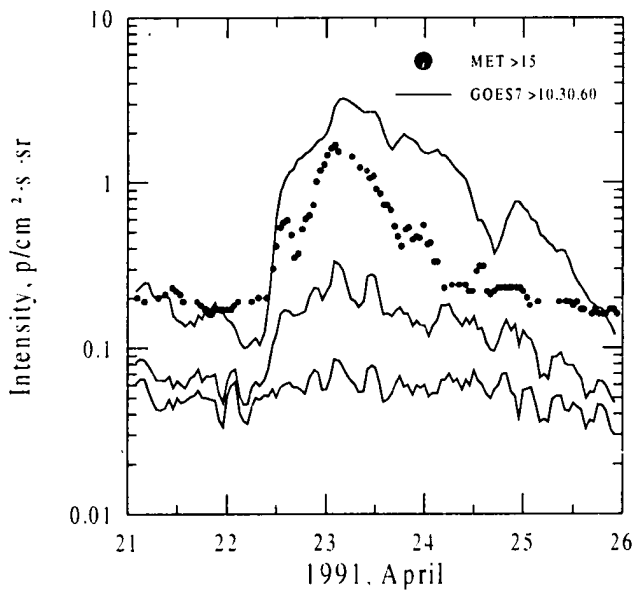
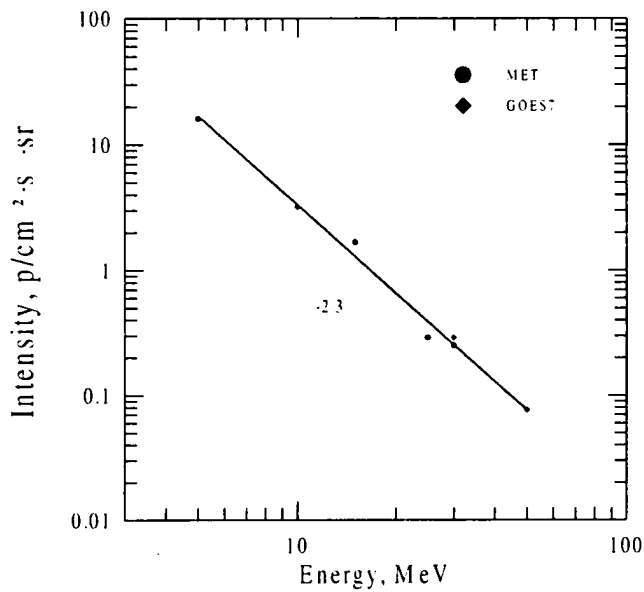


Source: ● flare 2d2251 N15 E02 2N AR 6562
▲ SC 4d1121

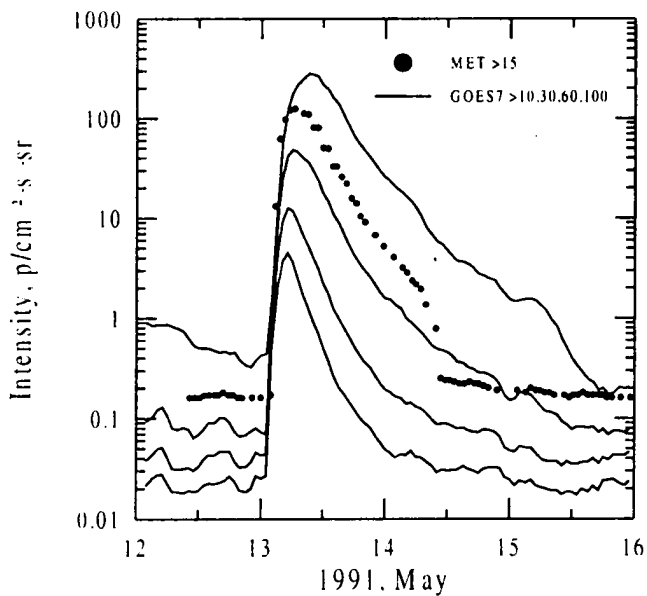
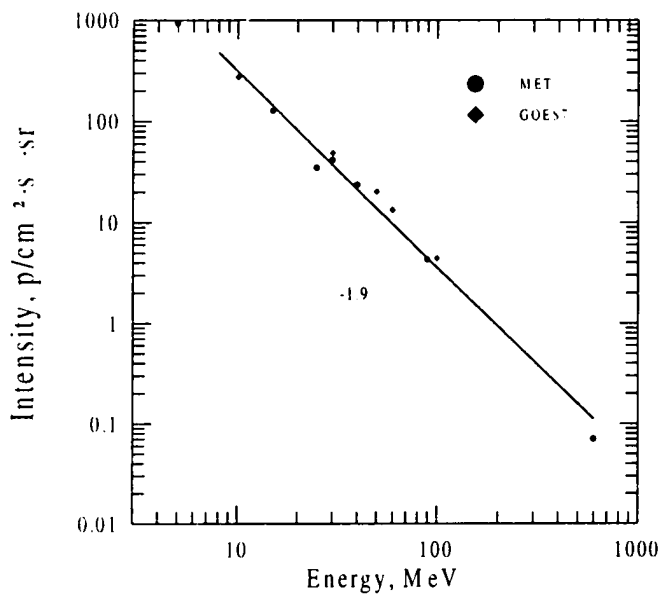


Source: unknown. enhanced X-ray at the level C3.0 for a long time
(02-22)

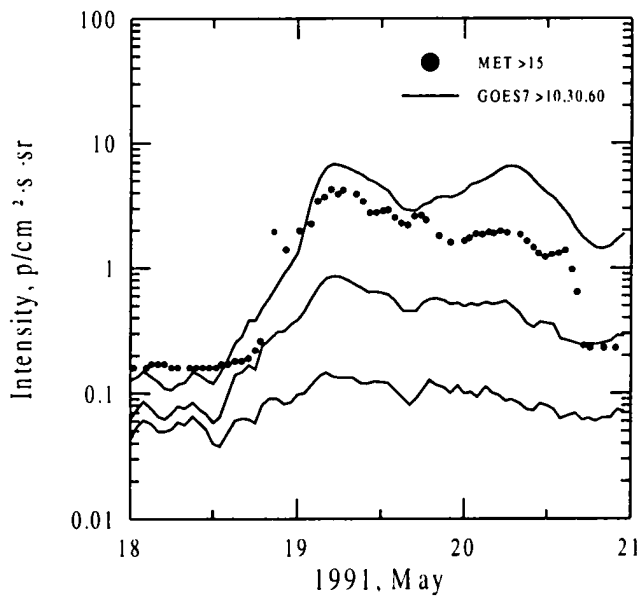
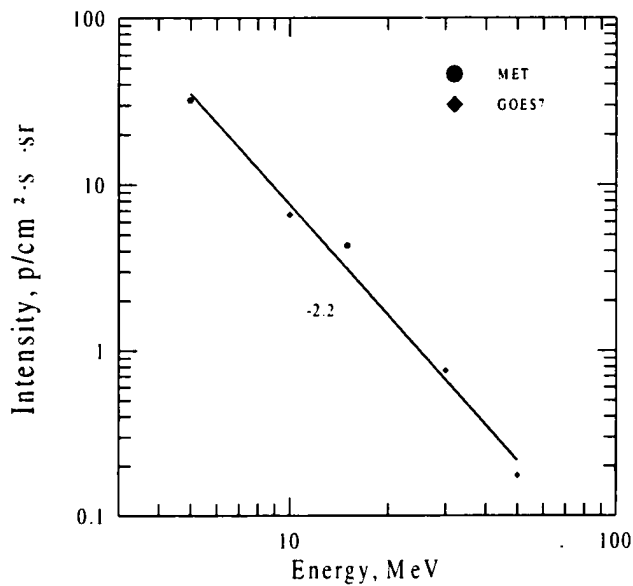
▲ SC 23d1041, 24d2045



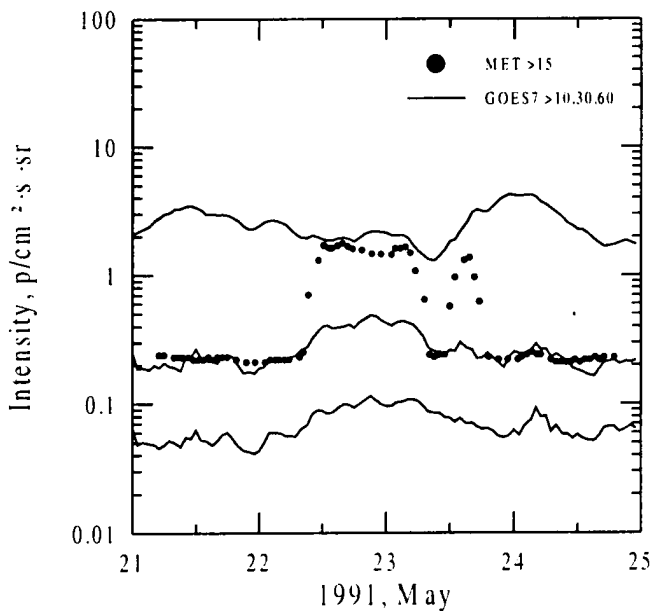
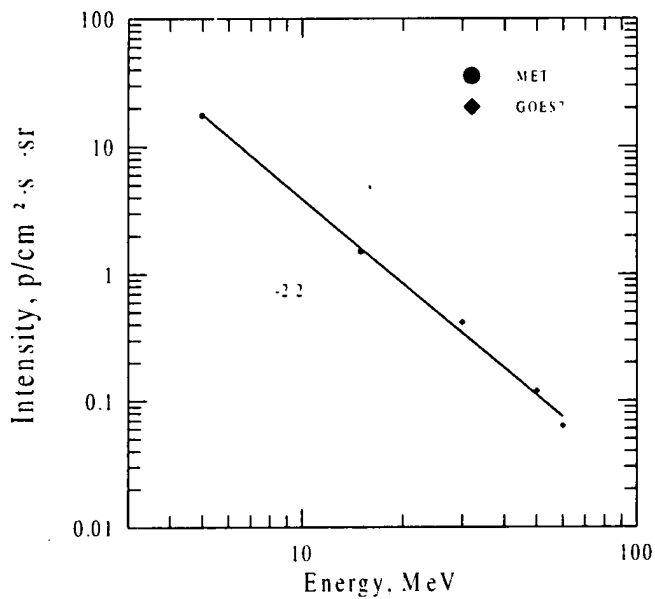
Source: ■ flare 0135 S07 W90 SN AR 6615
 ▲ SC 0857



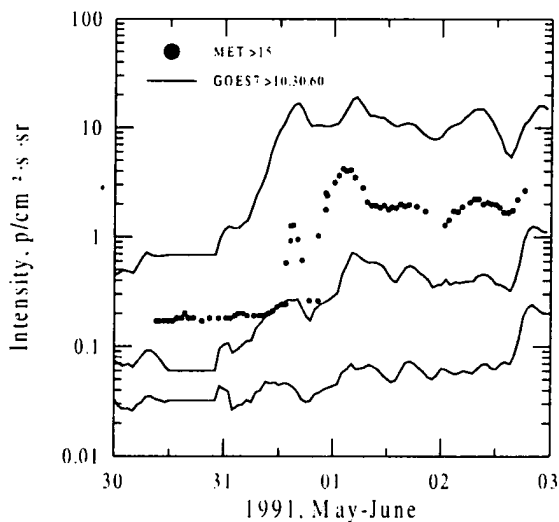
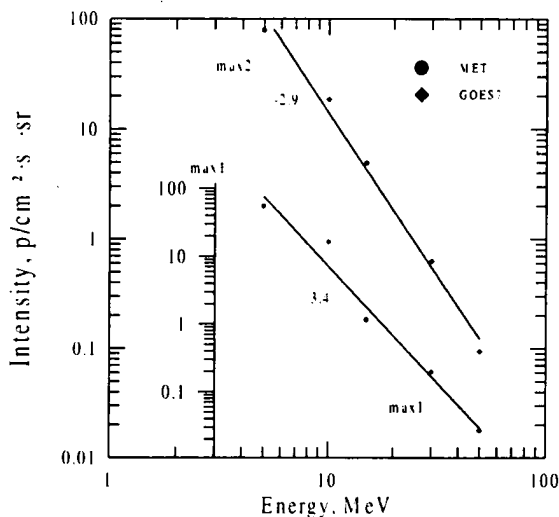
Source: ■ flare 0506 N18 W90 2N
 ○ 0530 N31 W87 2N AR 6619
 ▲ SC 21d1227



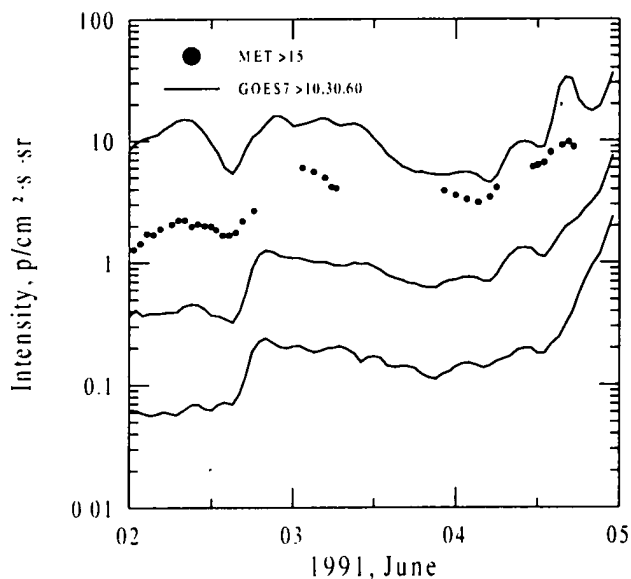
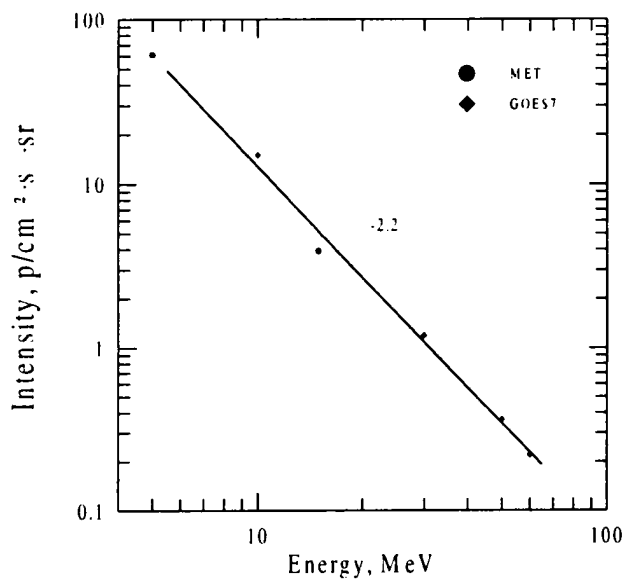
Source: unknown

☐ activity of the region AR6619/6659 on the invisible hemisphere☒ SC 22d0018

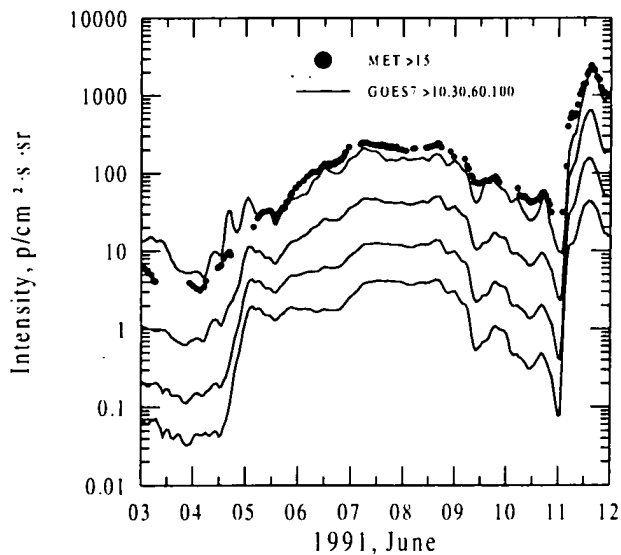
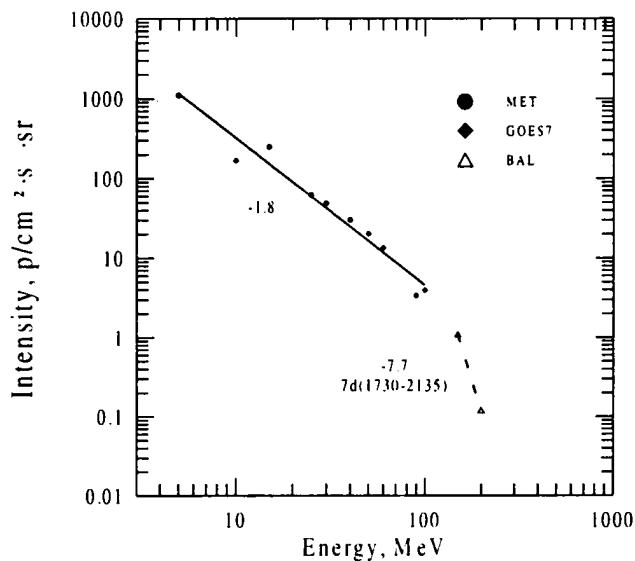
- Source: \diamond activity of the regions AR 6652, 6654 in the east and central sectors of the disk
- \circ flare 0346 S08 E13 2N AR 6652
- \circ flare 0825 N07 E20 1B AR 6654
- \circ 0830 N09 E23 1N AR 6654A
- \square activity of the region AR 6619/6659 on the invisible hemisphere
- \blacktriangle SC 31d1039



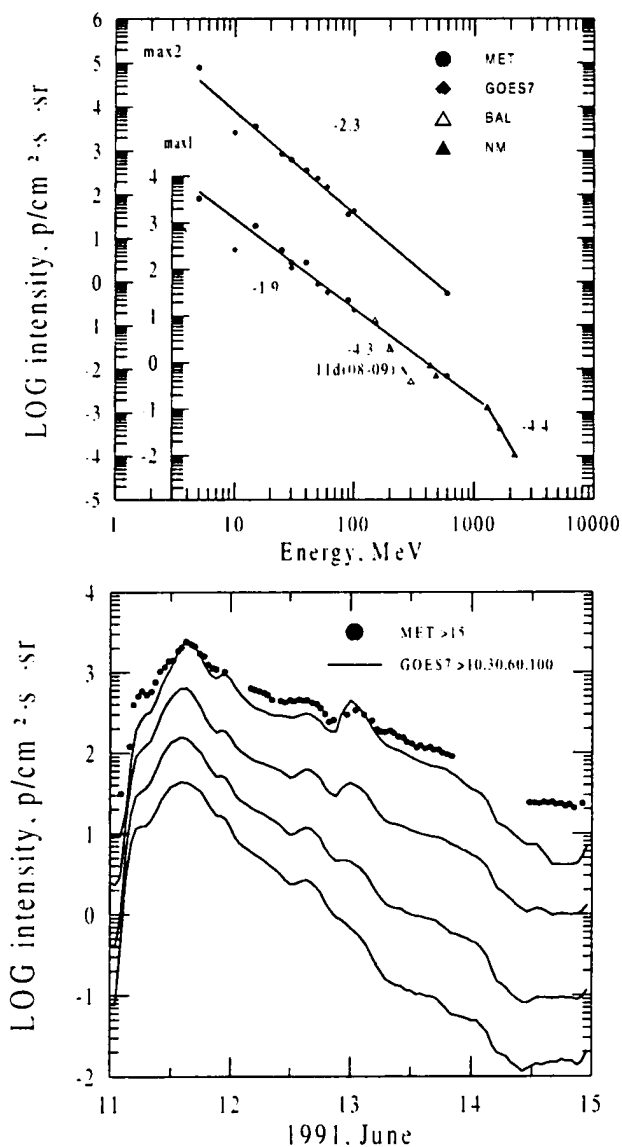
- Source: \diamond activity of the region AR 6652 to the west of CM
 \emptyset flare 1350 S08 W20 2B AR 6652
 \square activity of the region AR 6659 near E-limb
 \emptyset flare 1d1509 N22 E90 1F AR 6659



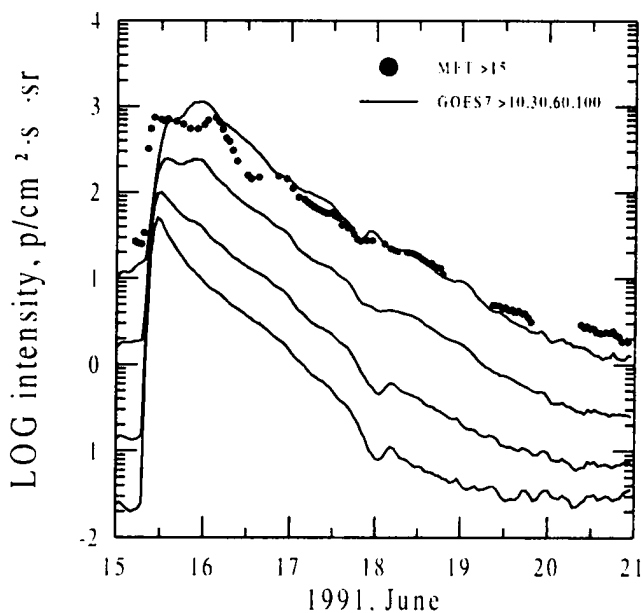
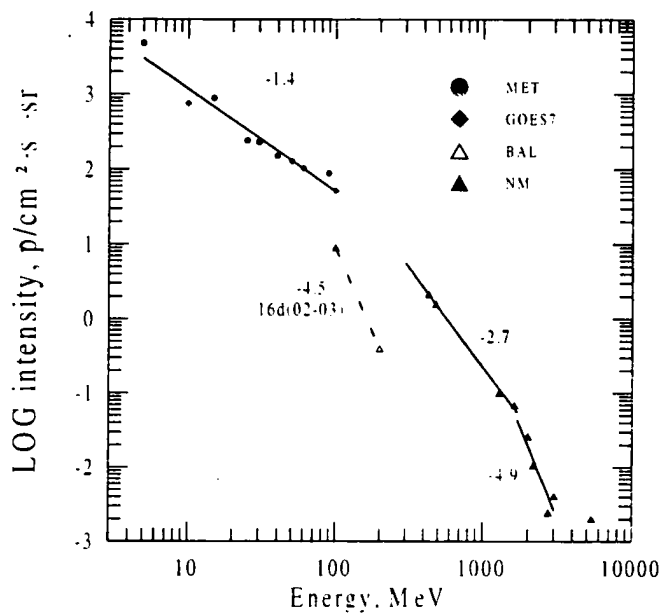
Source: ◆ high flare activity in the region AR 6659
 ○ flare 0334 N34 E75 2N AR 6659
 ○ flare 6d0054 N32 E45 3B AR 6659
 ○ flare 7d0013 N29 E24 3N AR 6659
 ▲ SC 0337, 1536, 7d2228, 9d0040, 10d1716



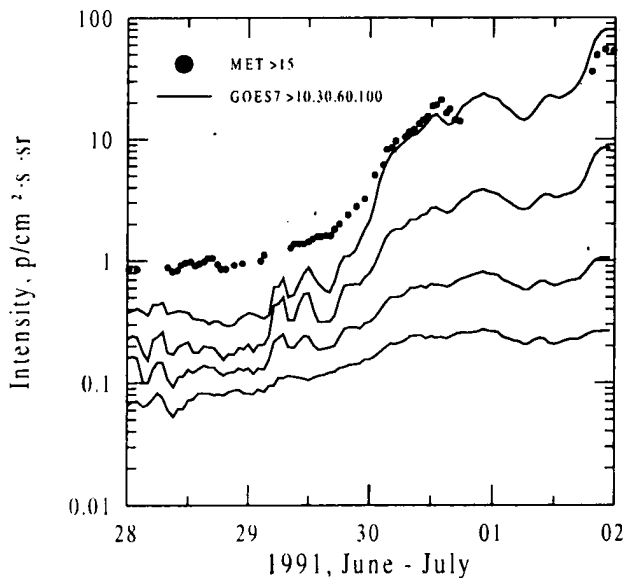
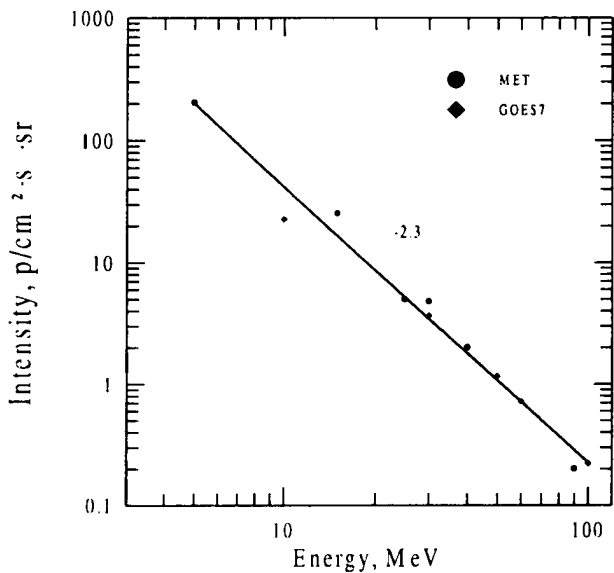
Source: ● flare 0105 N32 W15 2B AR 6659
 ○ flare <2005 N28 W41 1B AR 6659
 ▲ SC 12d1012



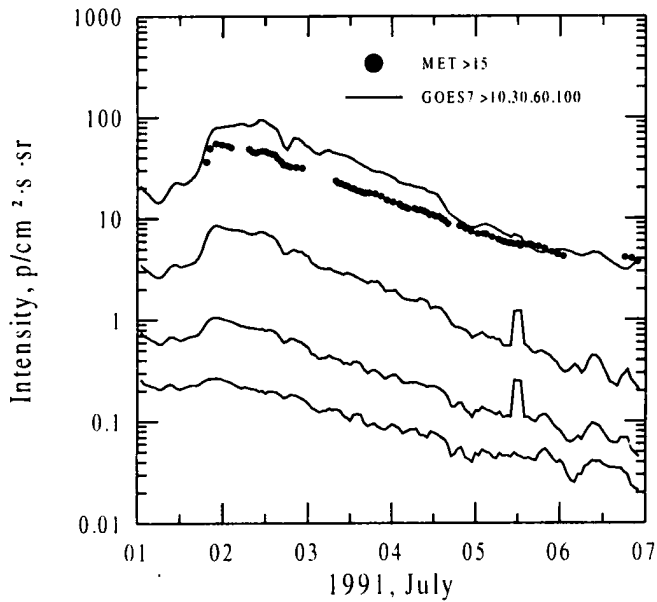
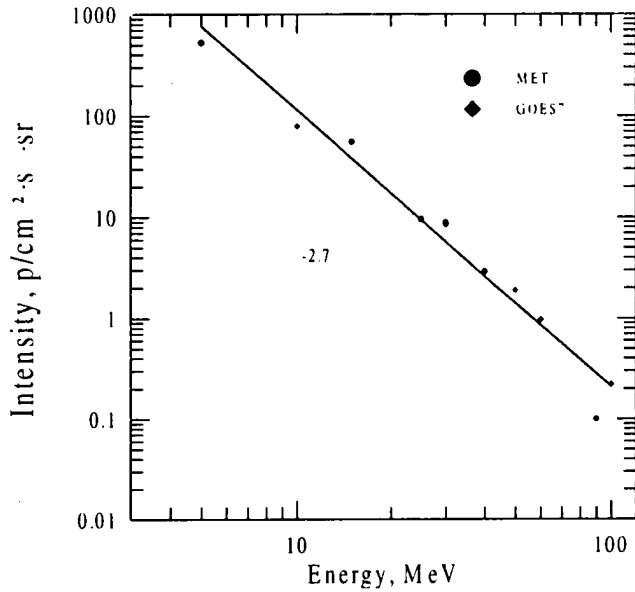
Source: ● flare 0633 N36 W70 3B AR 6659
 ▲ SC 17d1019, 17d1922



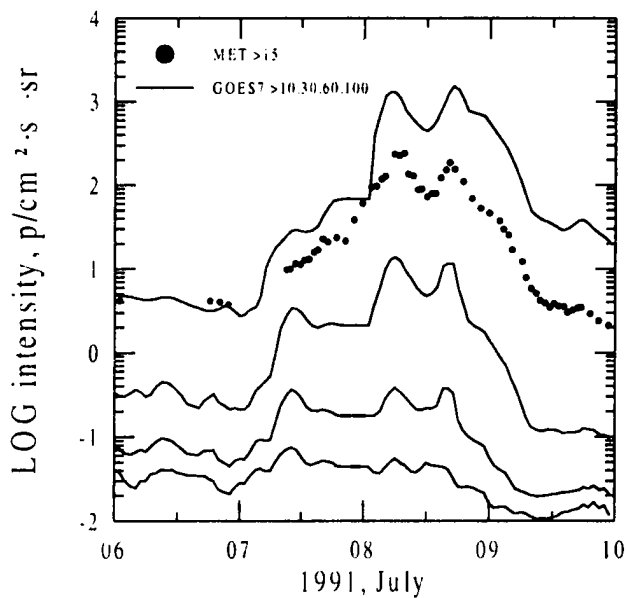
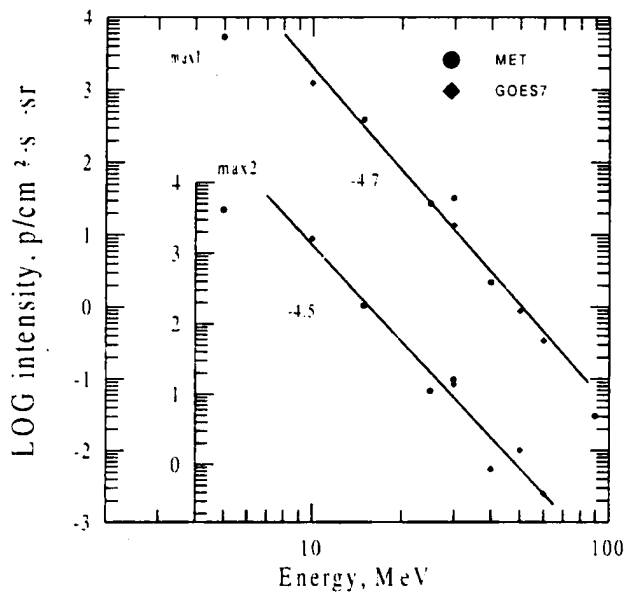
Source: \diamond activity near CM
 \circ flare 28d0452 S08 E08 SN AR 6693
 \square active region AR 6703 1-2 days before E-limb
 \blacktriangle SC 30d0116



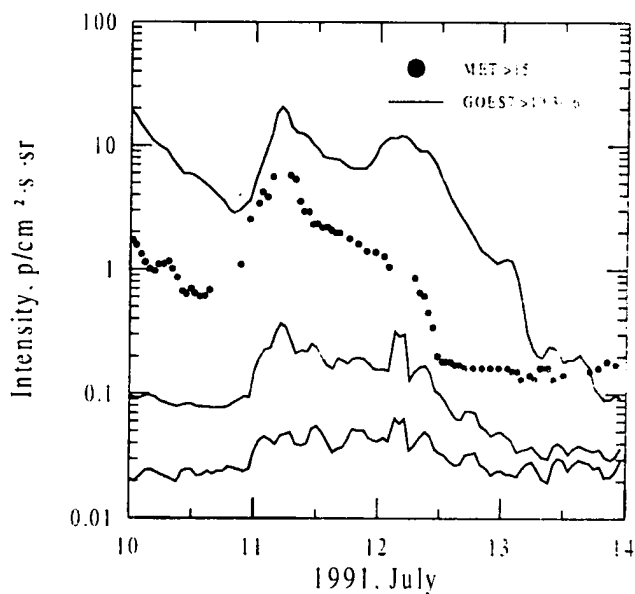
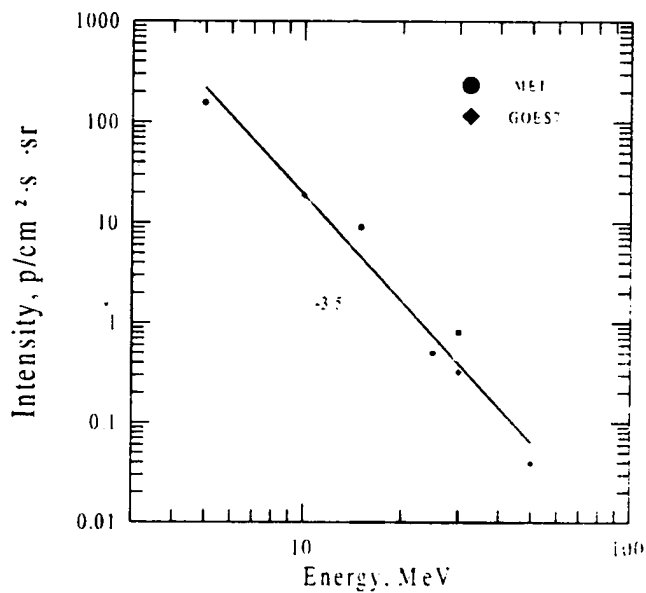
Source: ● flare 0126 N28 E78 1N AR 6703
 ▲ SC 2d0811



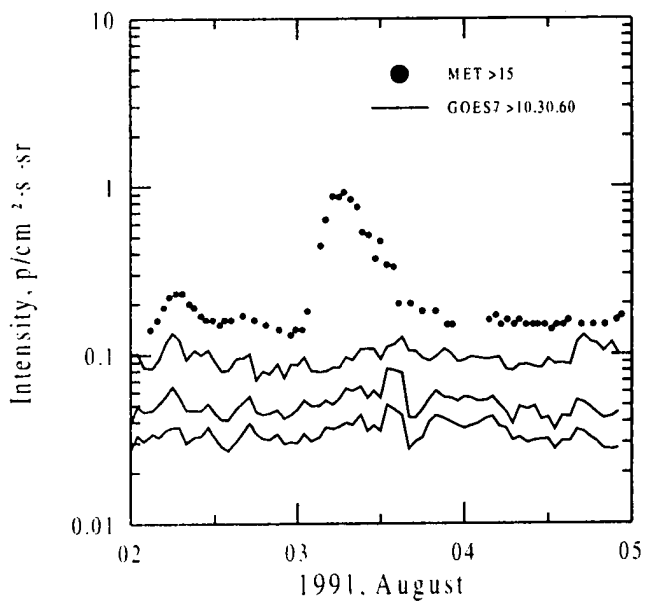
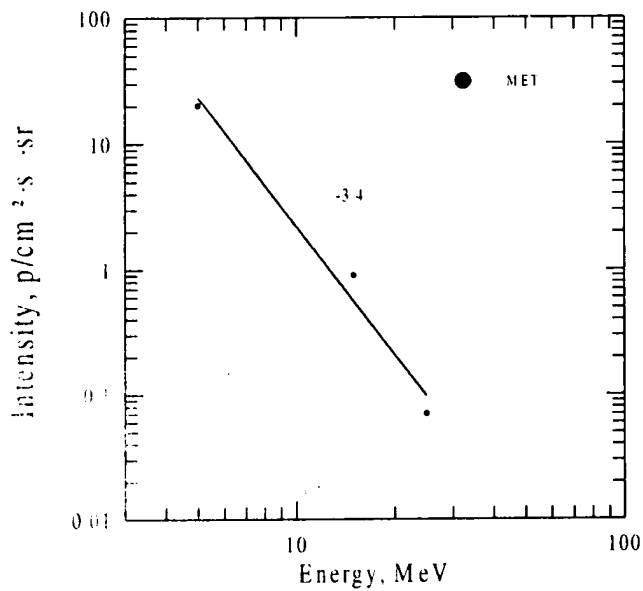
Source: ● flare 0120 N28 E00 3B AR 6703
 ▲ SC 6d1528, 8d1636



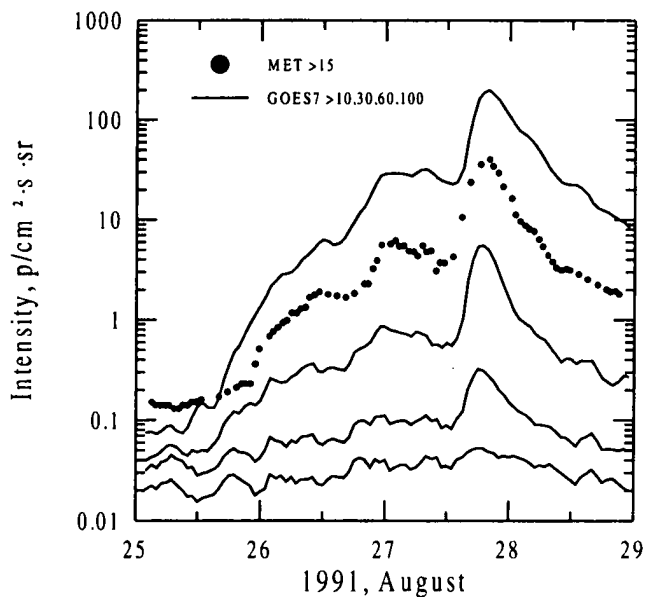
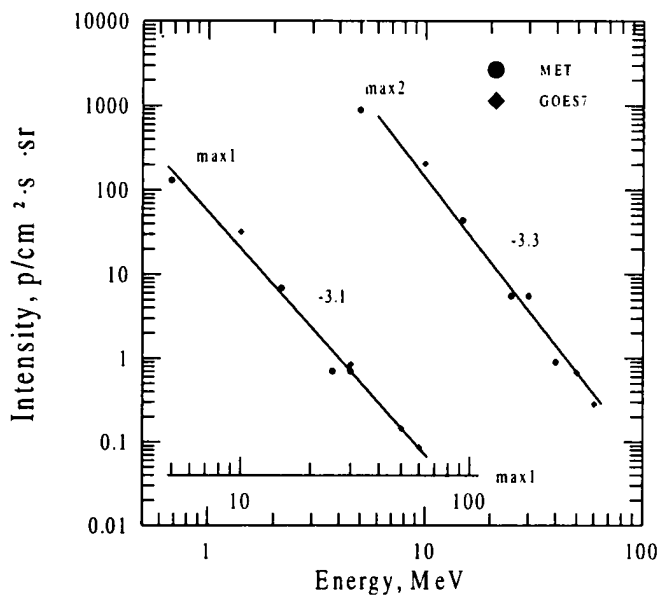
Source: ● flare 1159 S22 E32 2N AR 6718
 ○ flare 11d0835 N23 W52 3B AR 6711
 ▲ SC 12d0924, 13d0600



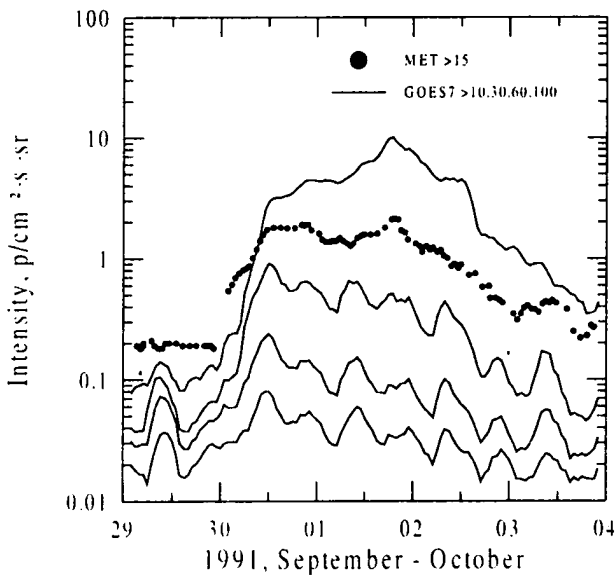
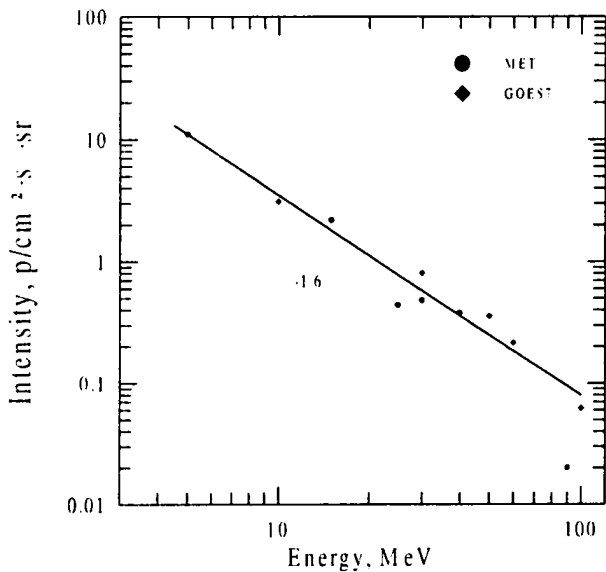
Source: ○ flare 0122 N25 E06 1B AR 6757
 ○ flare 0324 N19 W02 1F AR 6757
 ▲ SC 2d0533



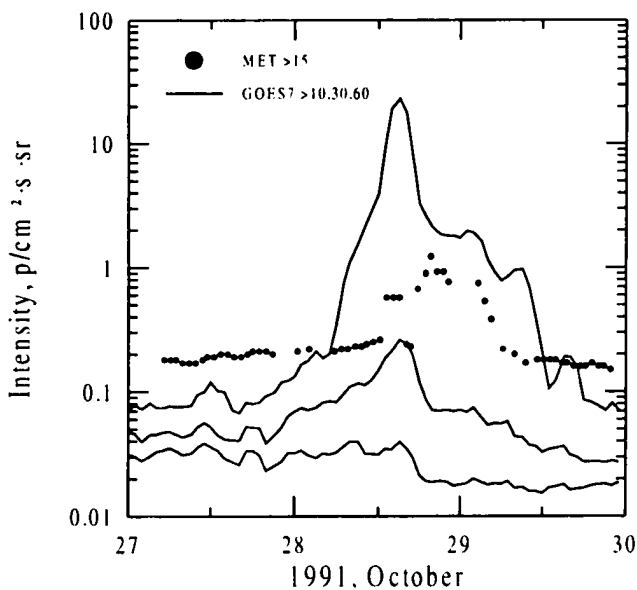
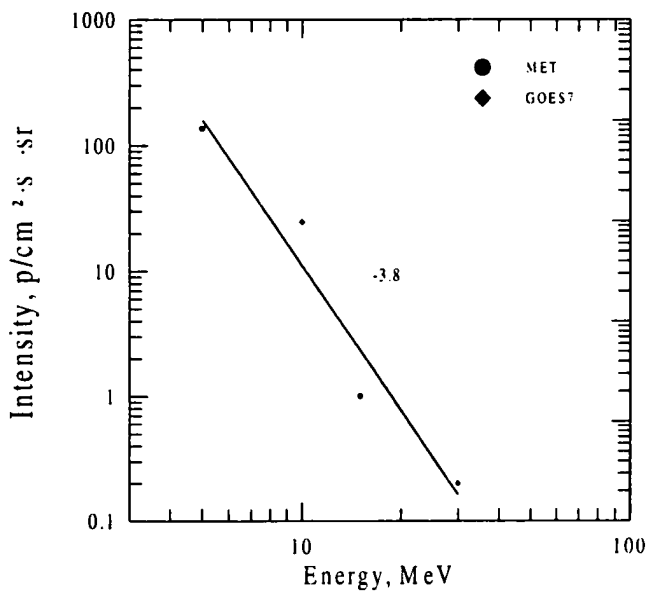
Source: ● flare 0026 N23 E76 2B AR 6805
 ▲ SC 27d1515, 29d2228



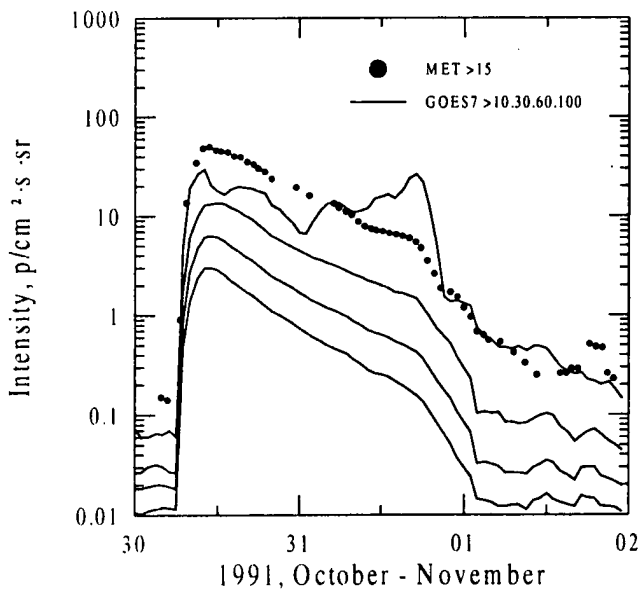
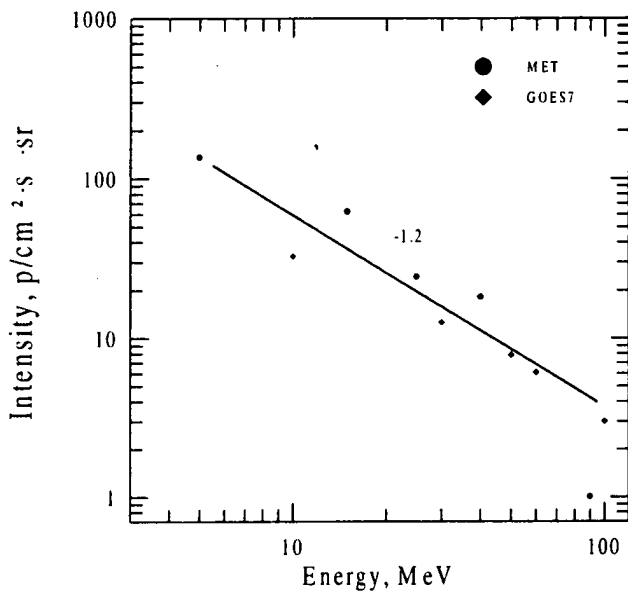
Source: ● flare 29d1513 S21 E31 3B AR 6858A
 ○ flare 1533 S12 W61 1F AR 6842
 ○ flare 2113 S12 E06 SN AR 6850
 ▲ SC 1d1815



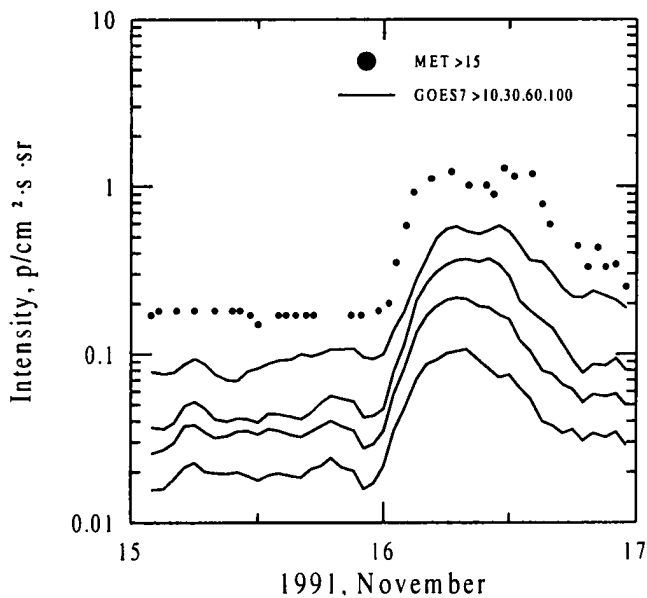
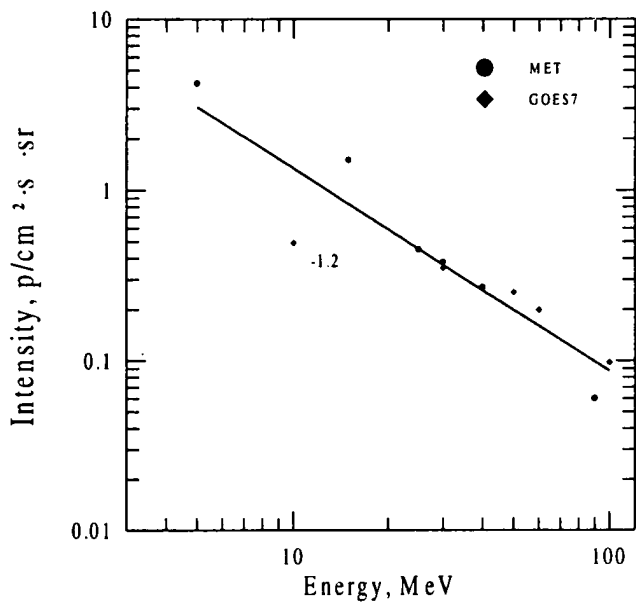
Source: ☉ flare 27d0538 S13 E17 2B AR 6891
 ▲ SC 1054



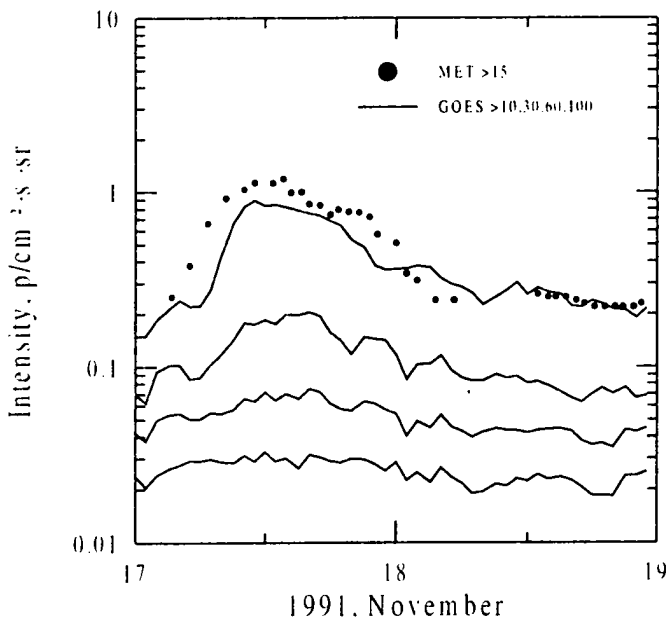
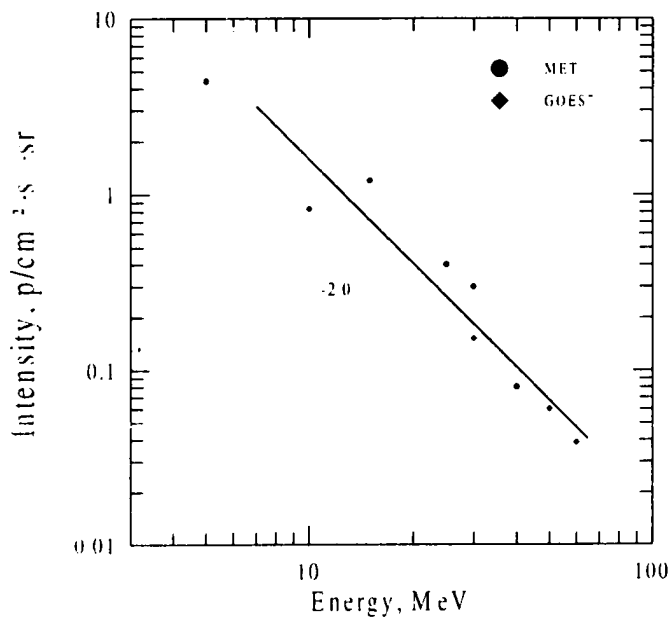
Source: ● flare 0610 S09 W26 2N AR 6891



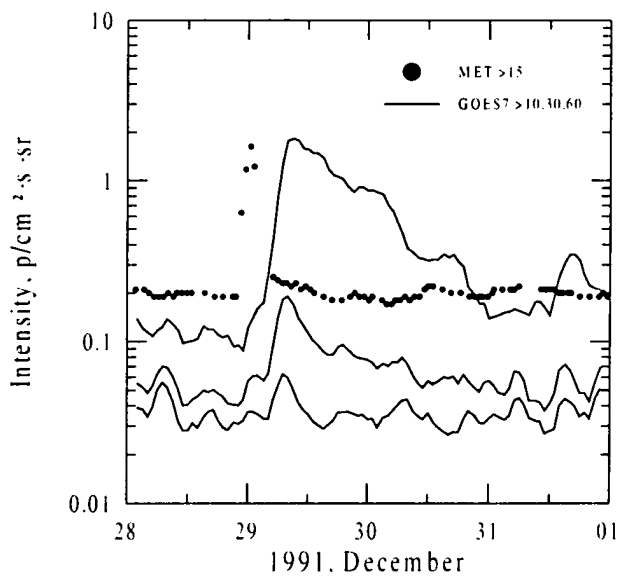
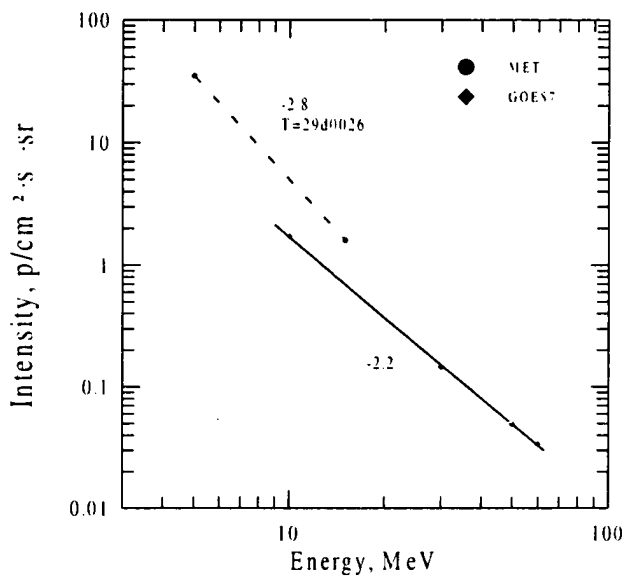
Source: ● flare 15d2234 S14 W19 2B AR 6919
 ○ flare 0434 S14 W18 1N AR 6919



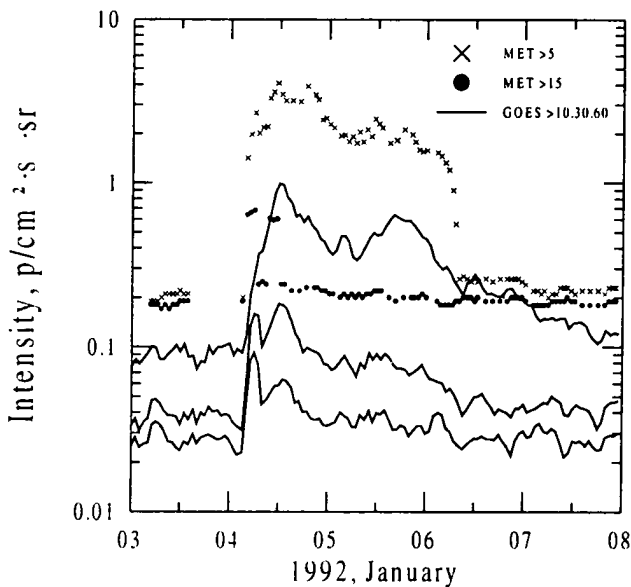
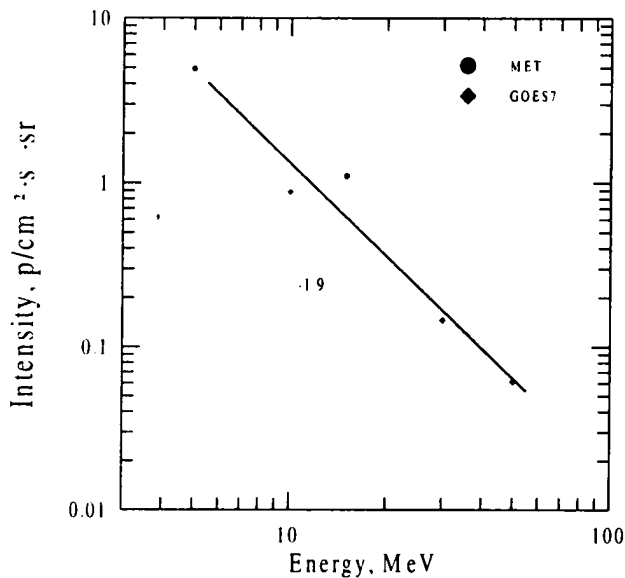
Source: ☉ flare 0154 S14W34 1N AR6919



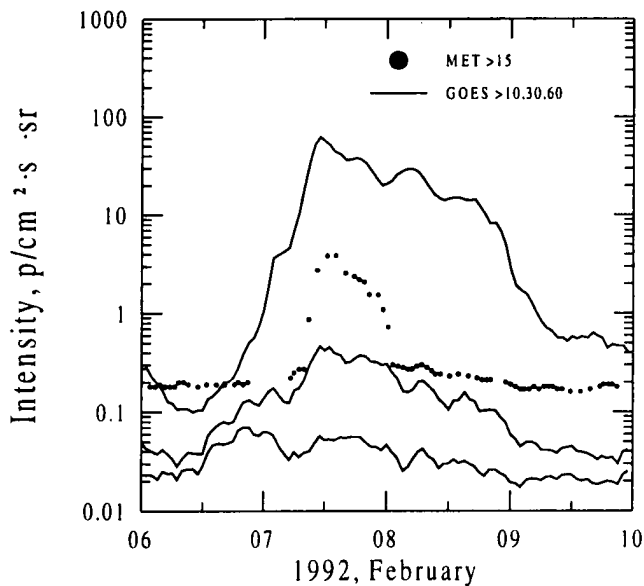
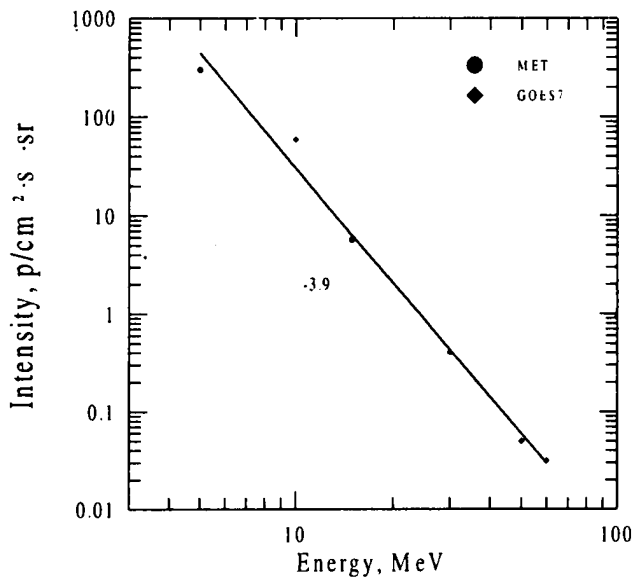
Source: ● flare 2108 S15 W47 SN AR 6982
 ▲ SC 31d1426



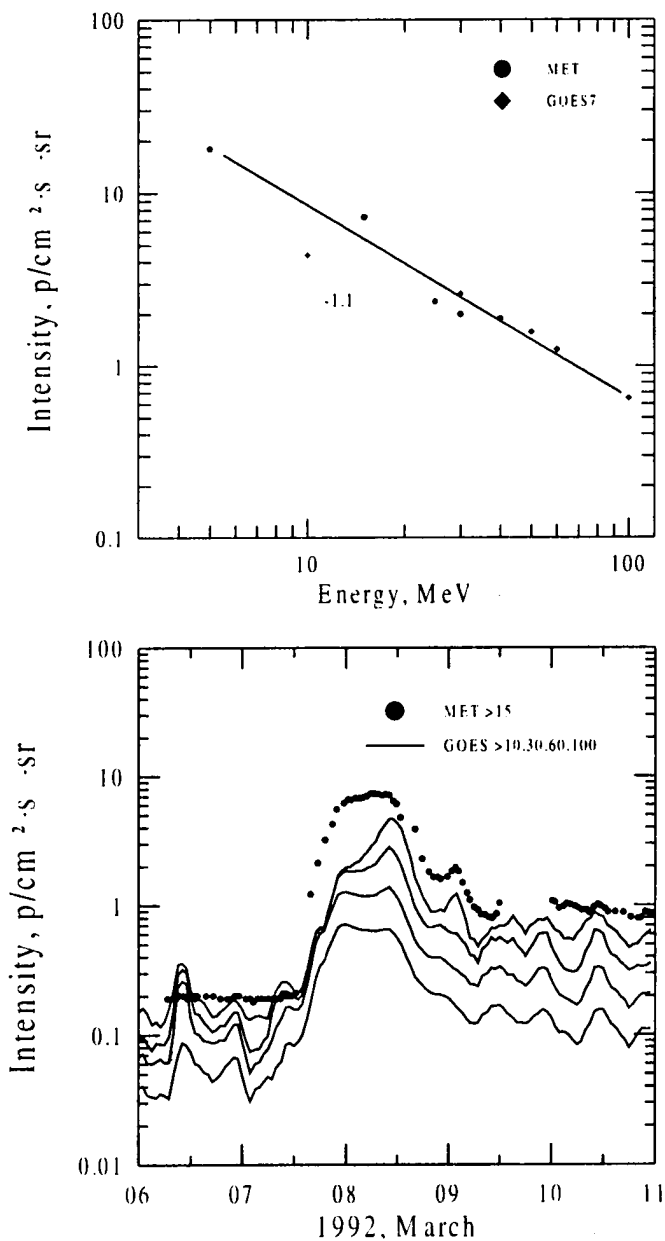
Source: ♦ activity of the region AR 6993
 ⊙ flare 3d1625 S10 E34 SF AR 6993
 ◇ activity of regions AR 6985, 6988 on the western hemisphere



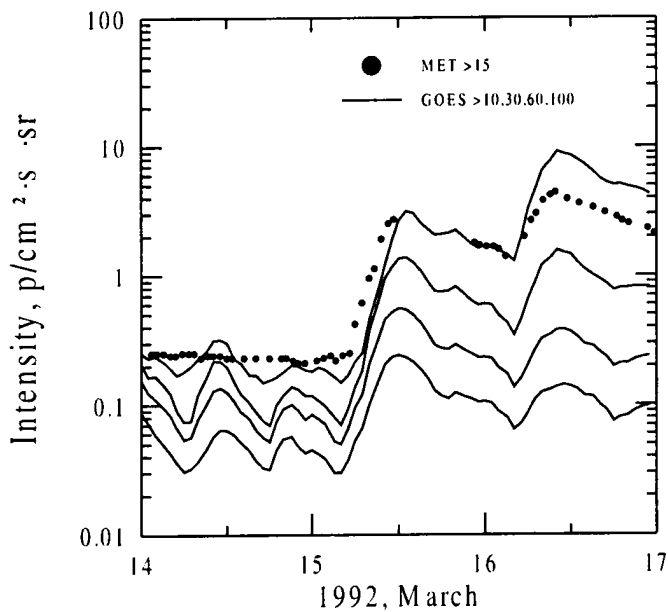
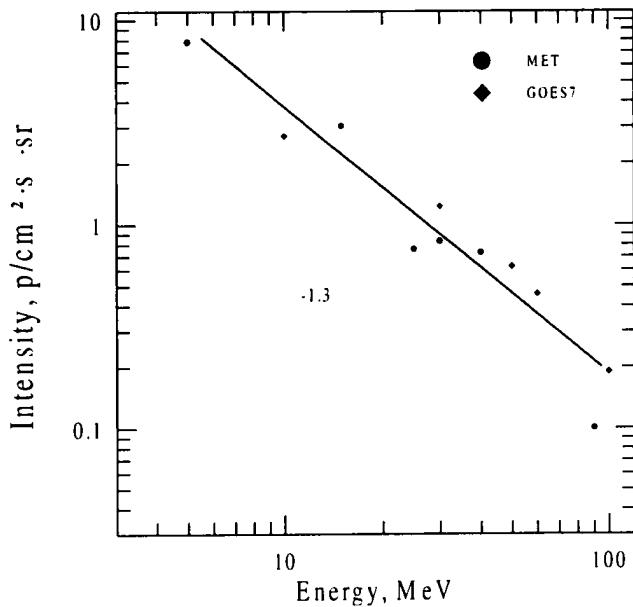
Source: ○ flare 6d0928 S13 W09 2B AR 7042
 ○ flare 1140 S21 W53 2B AR 7035
 ▲ SC 8d1428



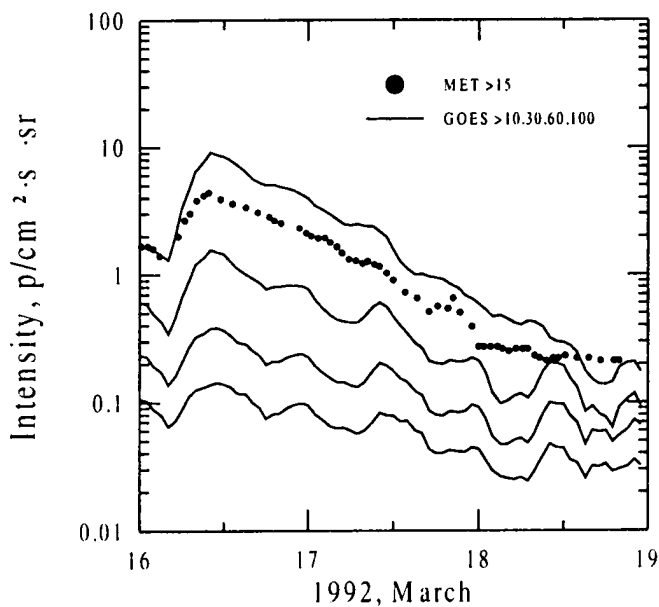
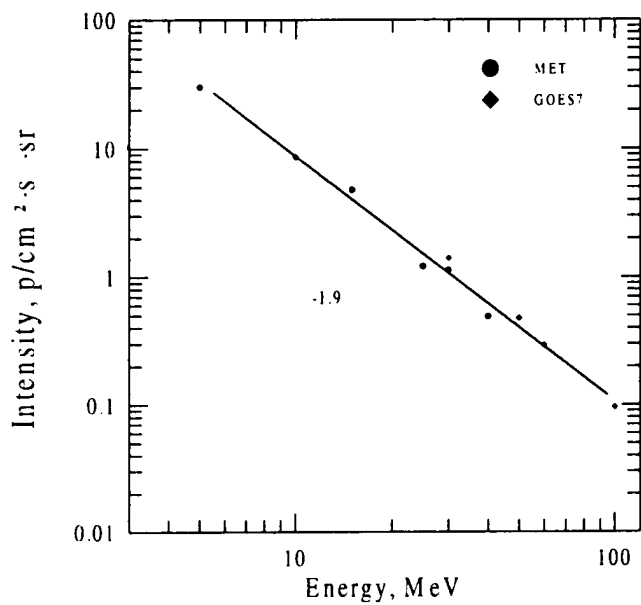
Source: ○ prolonged X-ray burst 08-18 at the level C2.0
type II/IV bursts 0838-1015



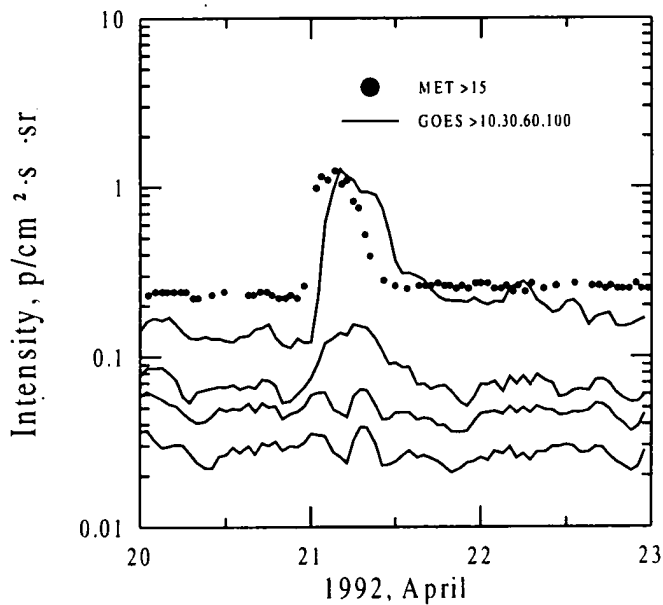
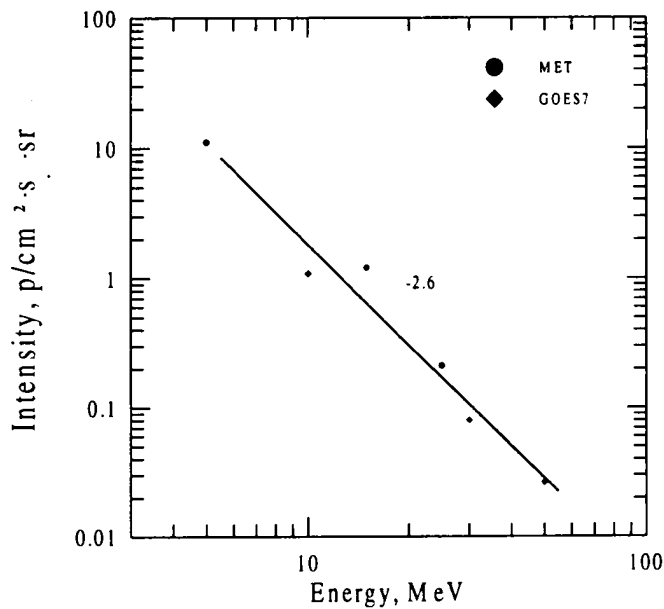
Source: ● flare 0120 S15 E27 2B AR 7100



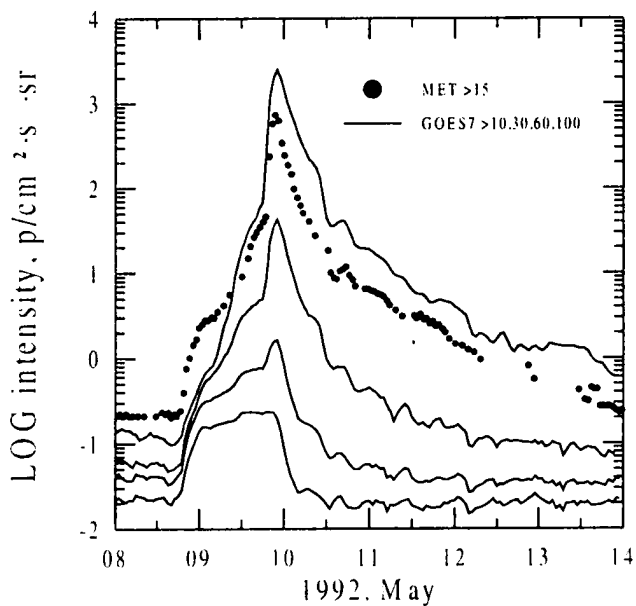
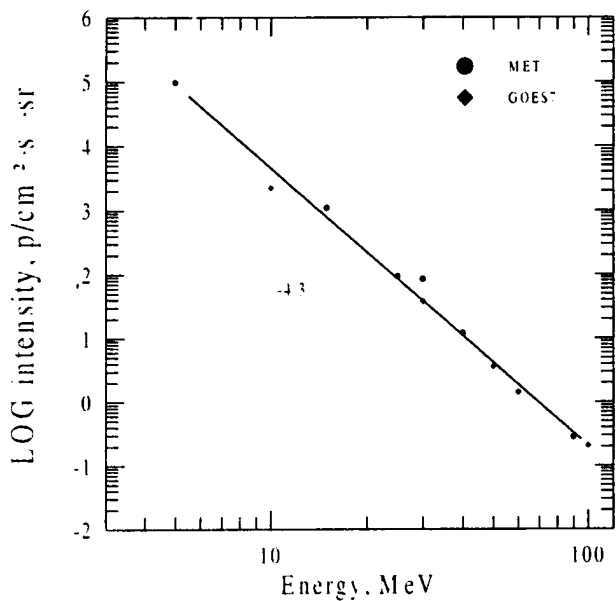
Source unknown
▲ SC 17d0951



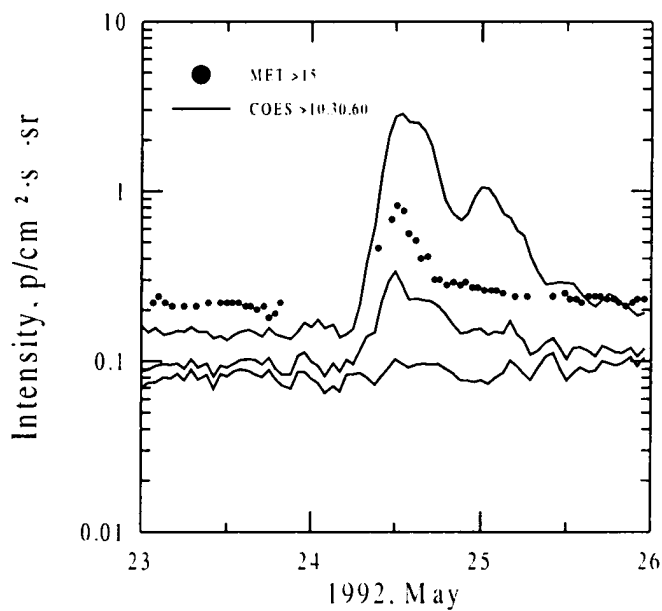
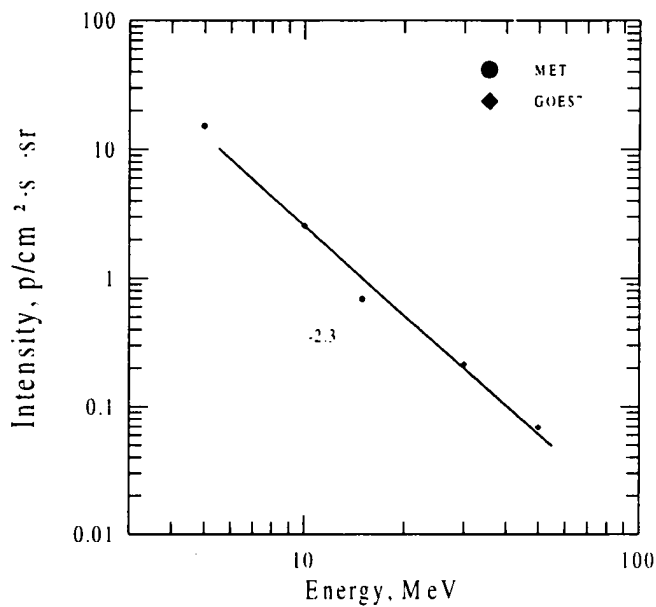
Source: ○ flare 1855 S16 E31 1N AR 7135



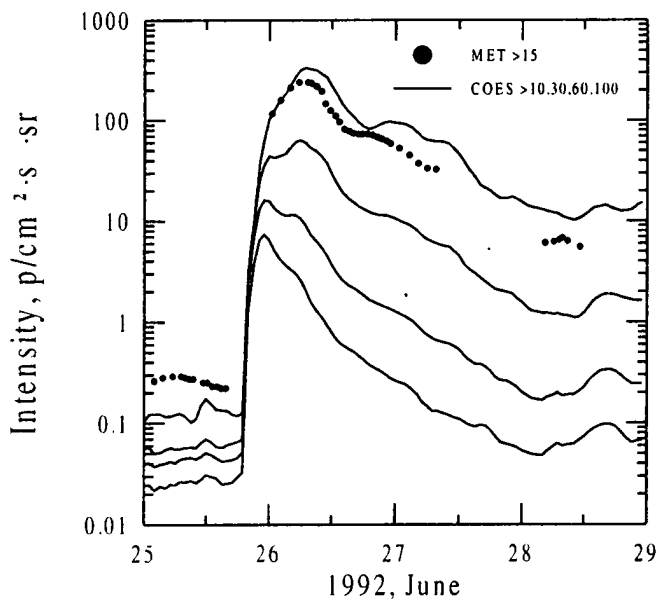
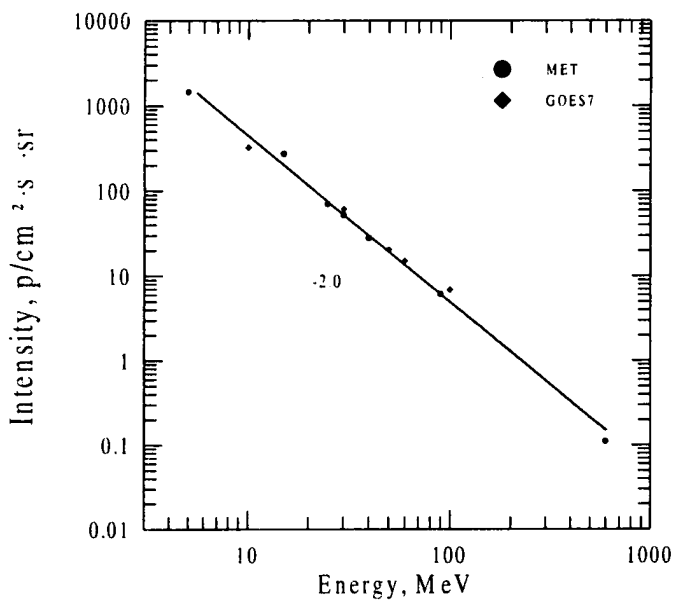
Source: ● flare 1513 S25 E07 2N AR 7154
 ○ flare 7d0635 S21 E48 2N AR 7154
 ▲ SC 9d1557, 9d1957



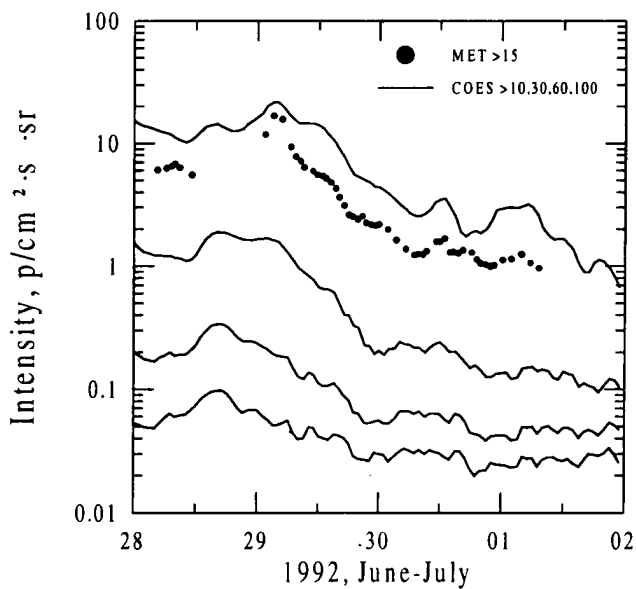
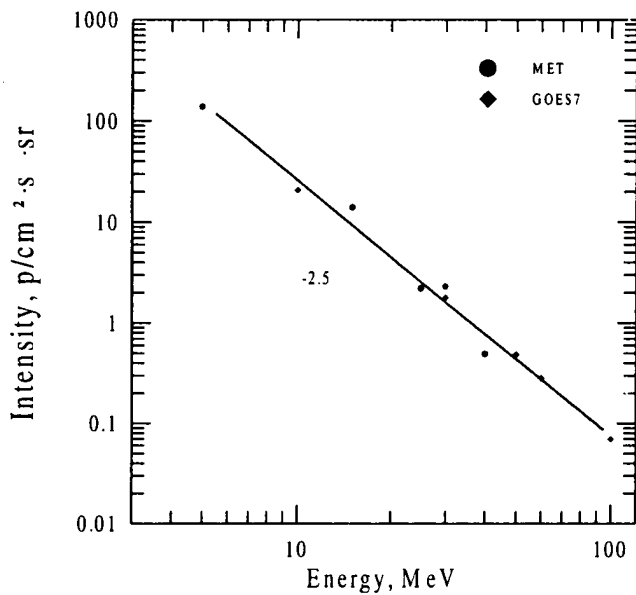
Source: ■ flare <0353 S11 W90 -/C1.1 AR 7167



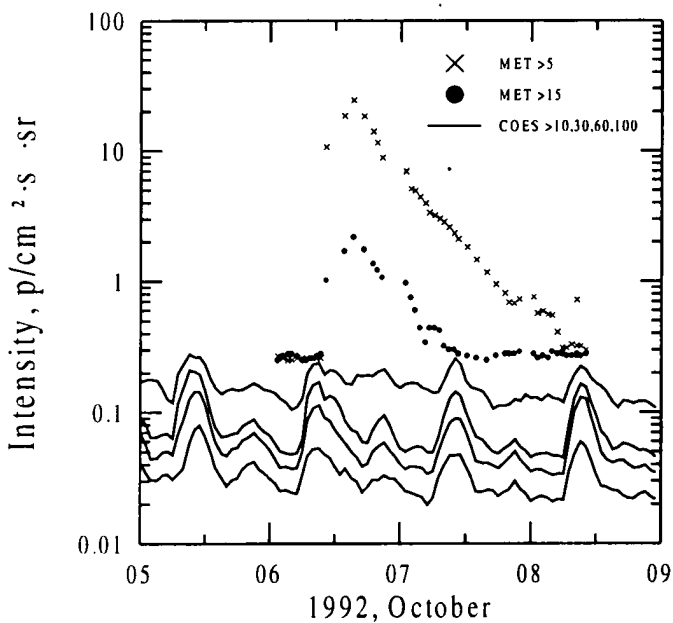
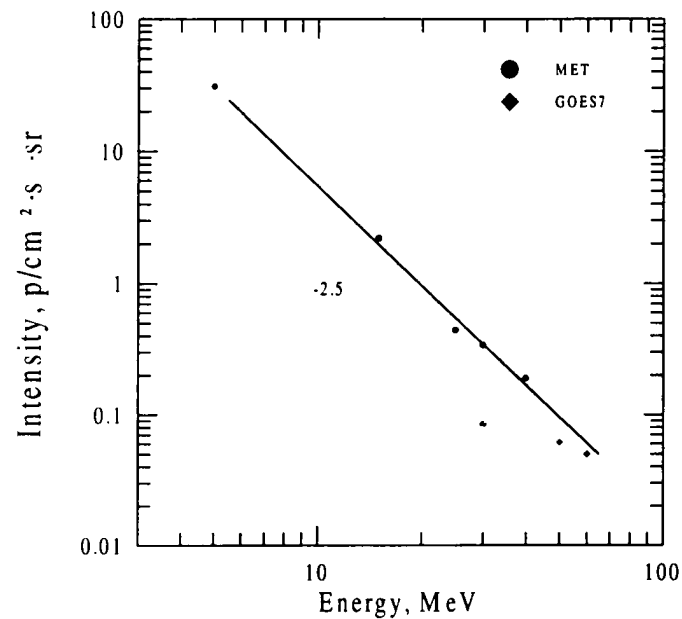
Source: ● flare 1749/1947 N09 W69 1B AR 7205
 ▲ SC 27d2035



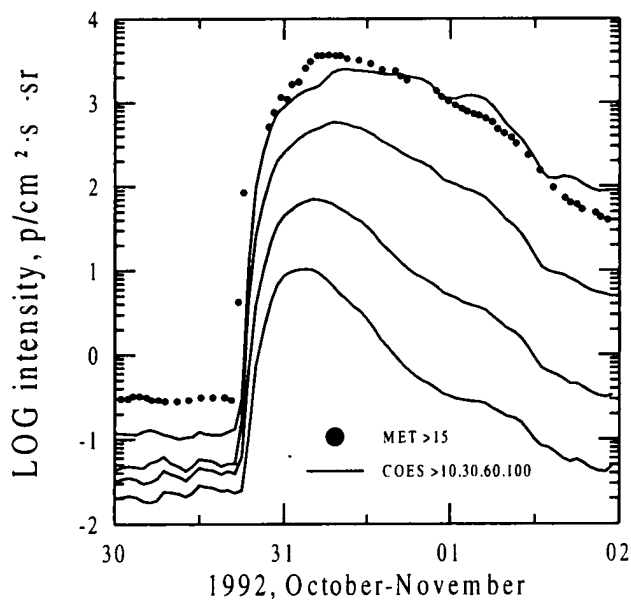
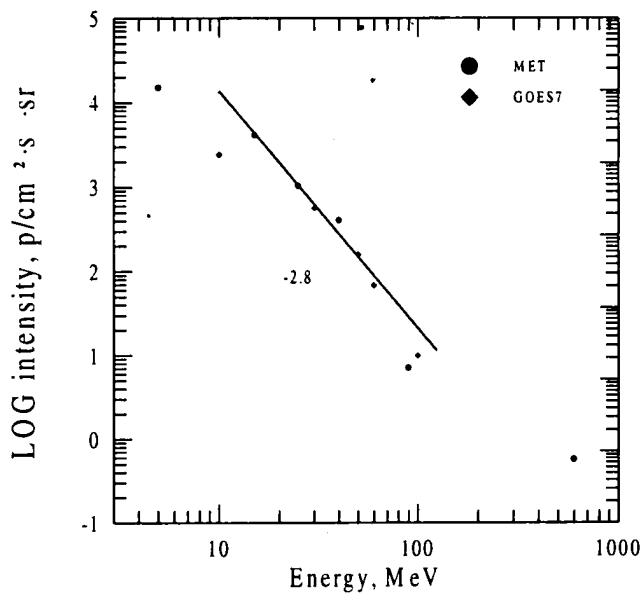
Source ■ flare 0514 N11 W90 SN AR 7205
 X-ray burst 0213-0423 M1.1
 ▲ SC 27d2035



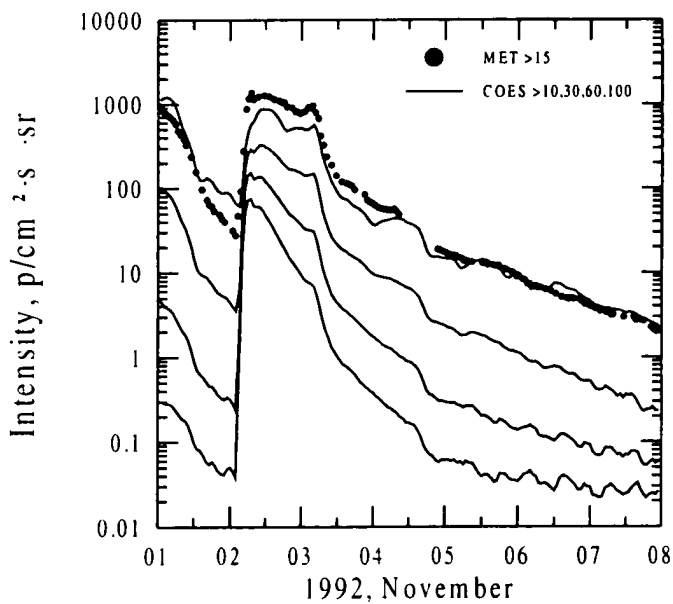
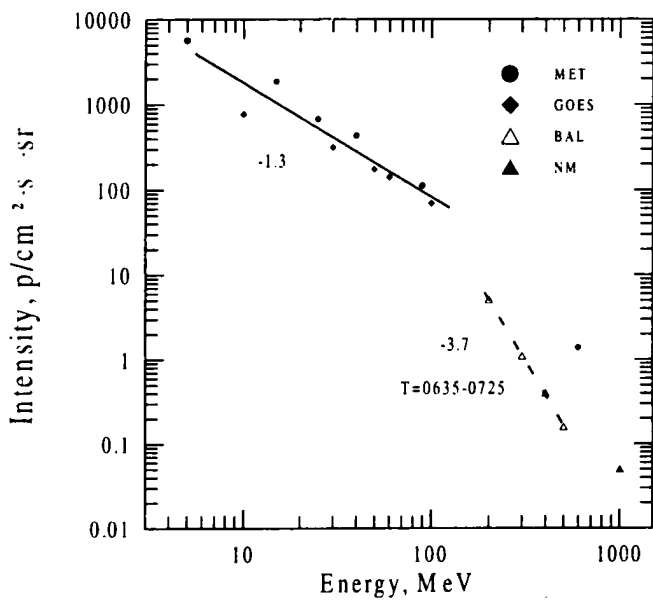
Source ○ flare 5d1506 N10 E32 1B AR 7305



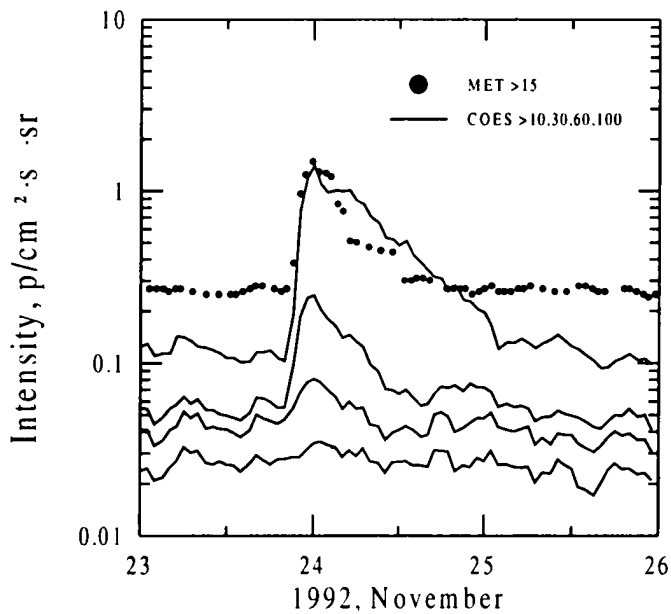
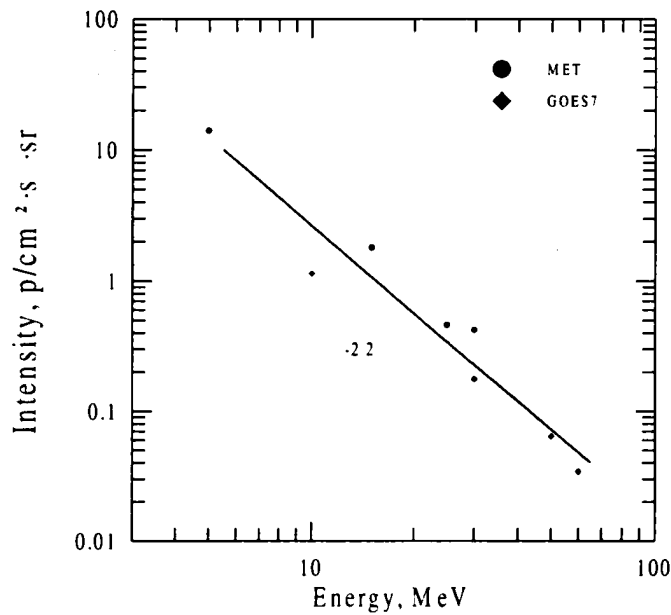
Source ● flare 1702 S26 W63 2N AR 7321
 ▲ SC 1d2147



Source ■ flare 0310 S23 W90 2B AR 7321
 ▲ SC 1d2147, 4d1312



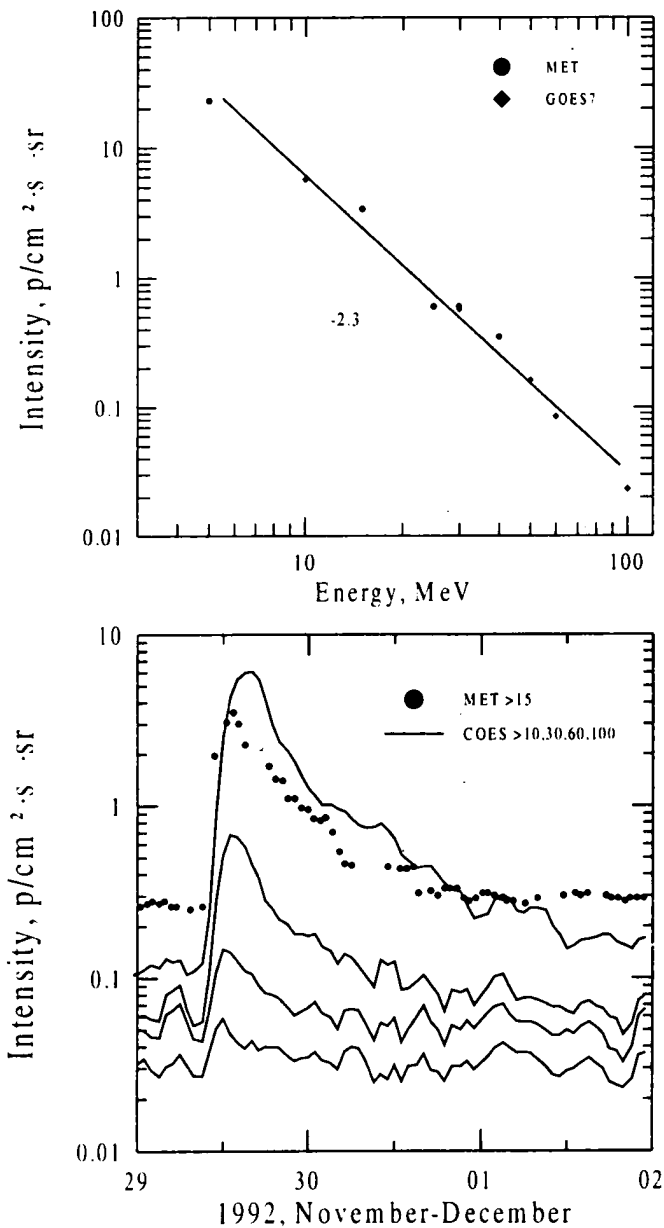
Source ● flare 2018 S08 W89 SF AR 7342



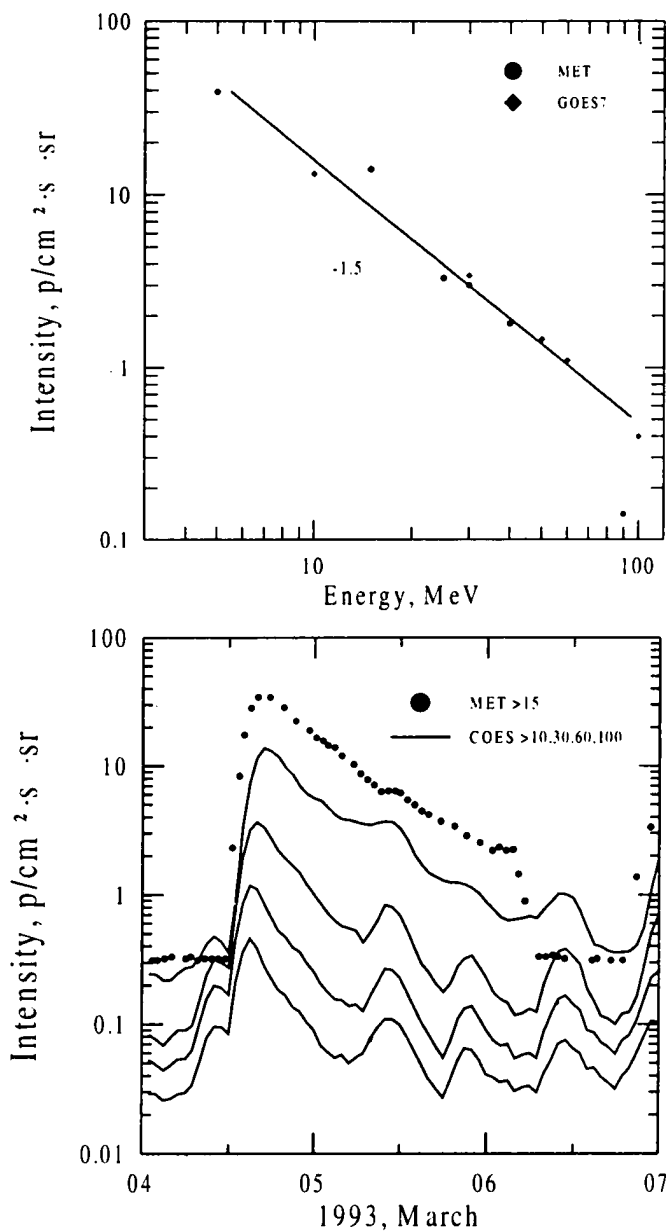
Source:

X-ray burst 0815-1032 C9.1

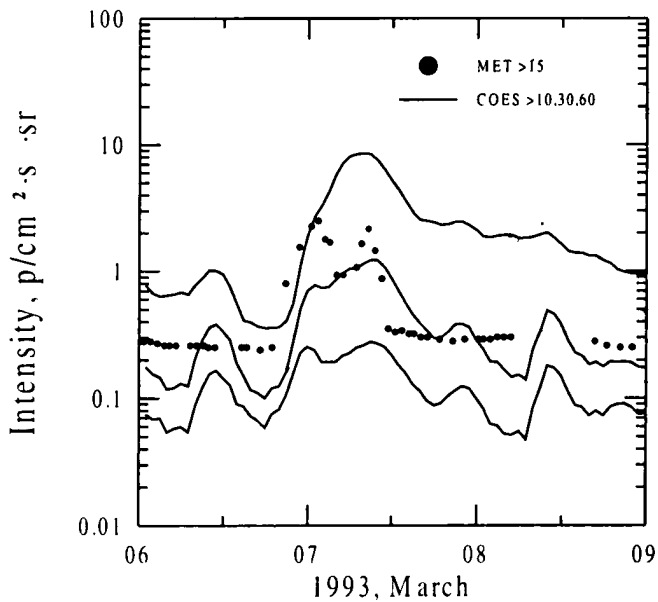
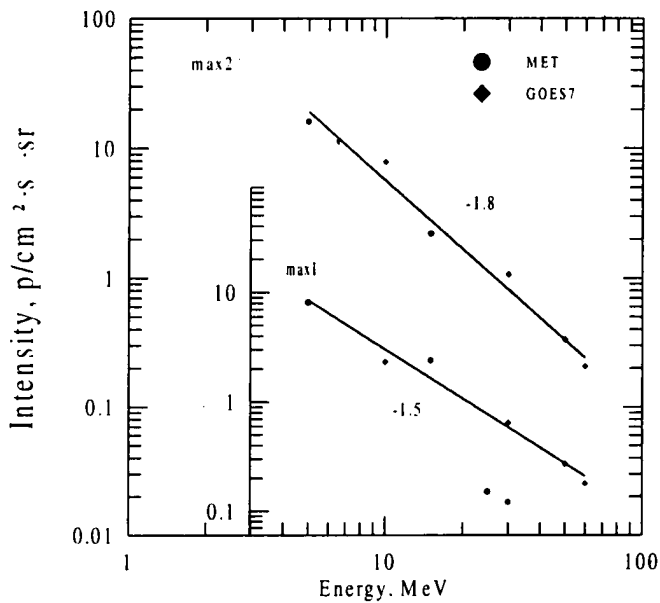
☉ flare 1230 S16 E00 1B AR 7351



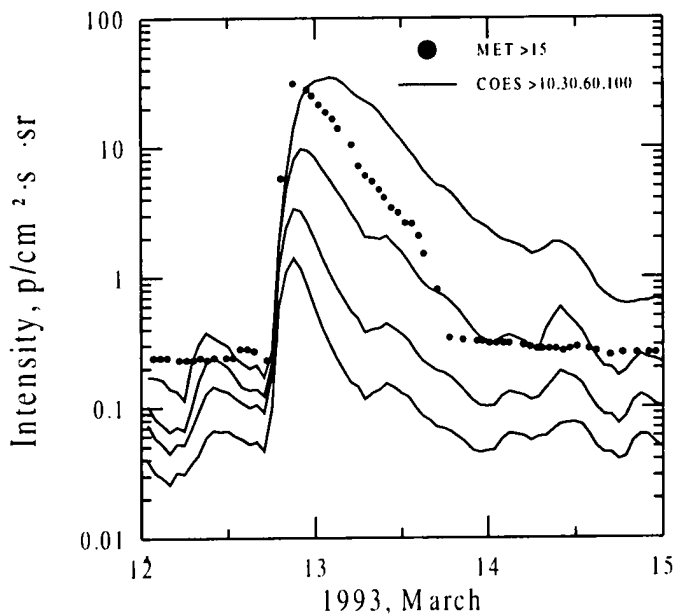
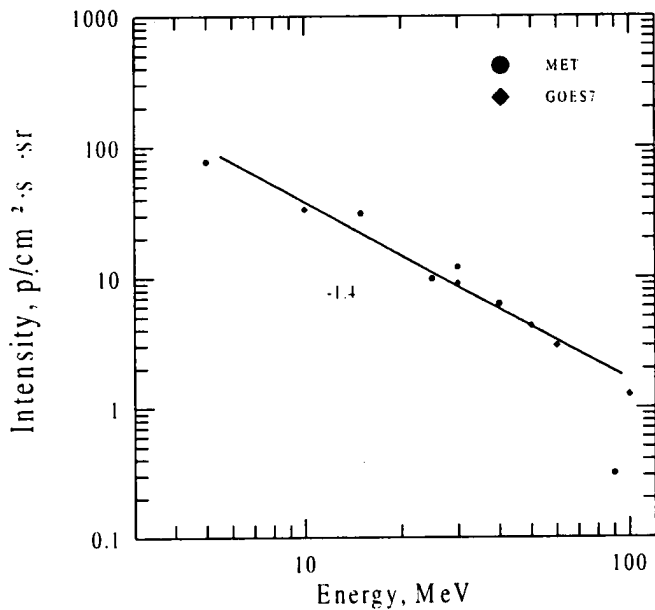
Source: ● flare 1214 S13 W55 1N AR 7434



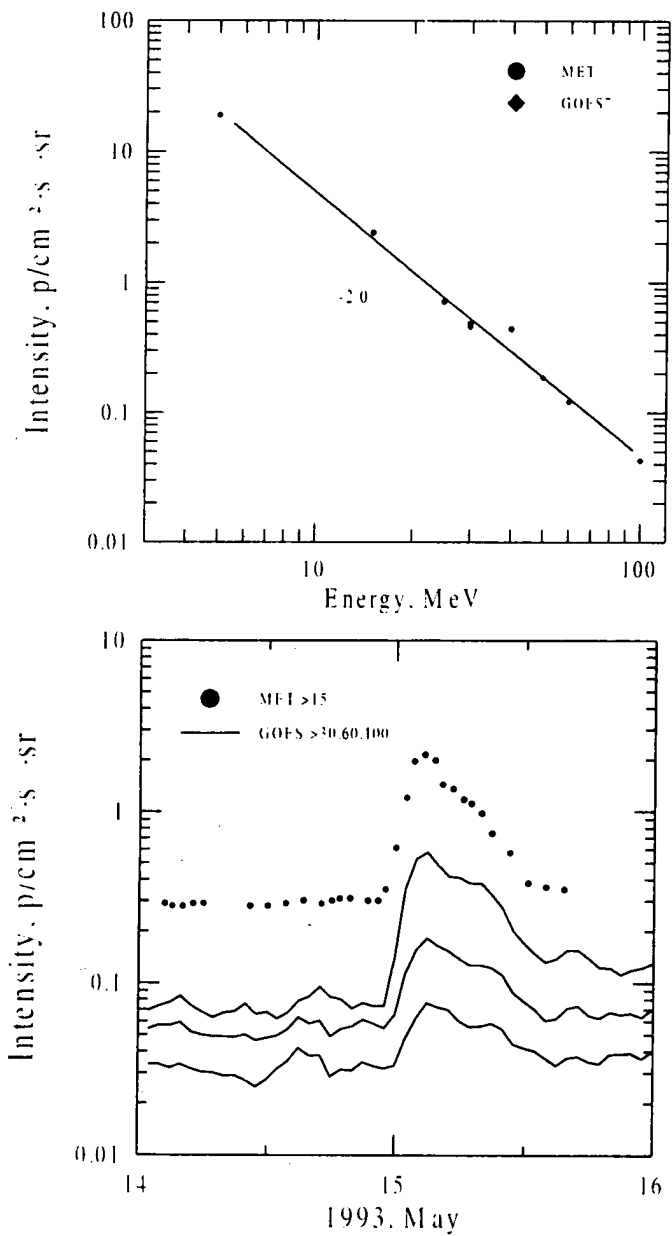
Source ● flare 1944 S04 E29 2B AR 7440



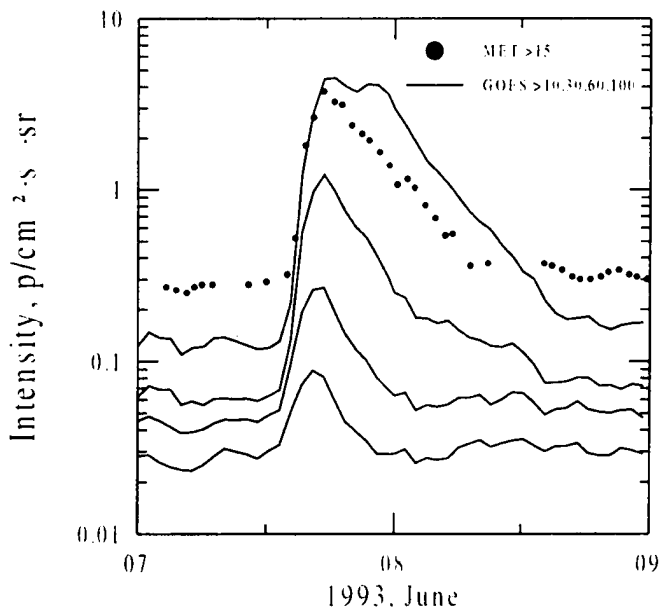
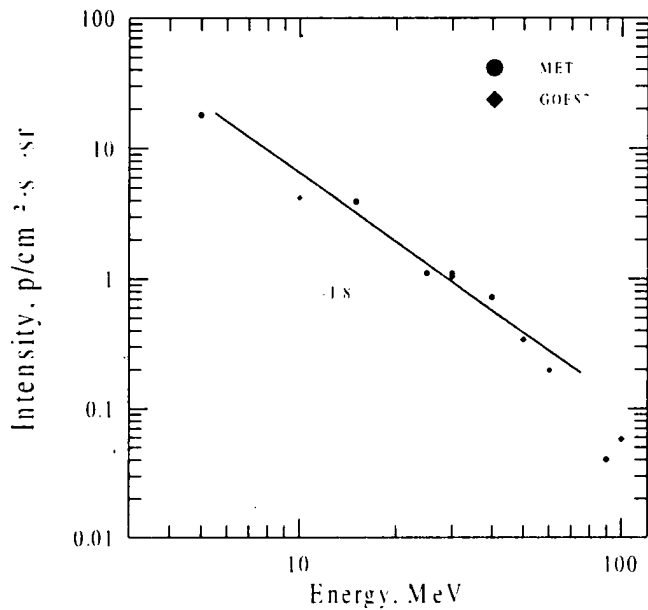
Source: ● flare 1703 S03 W48 3B AR 7440



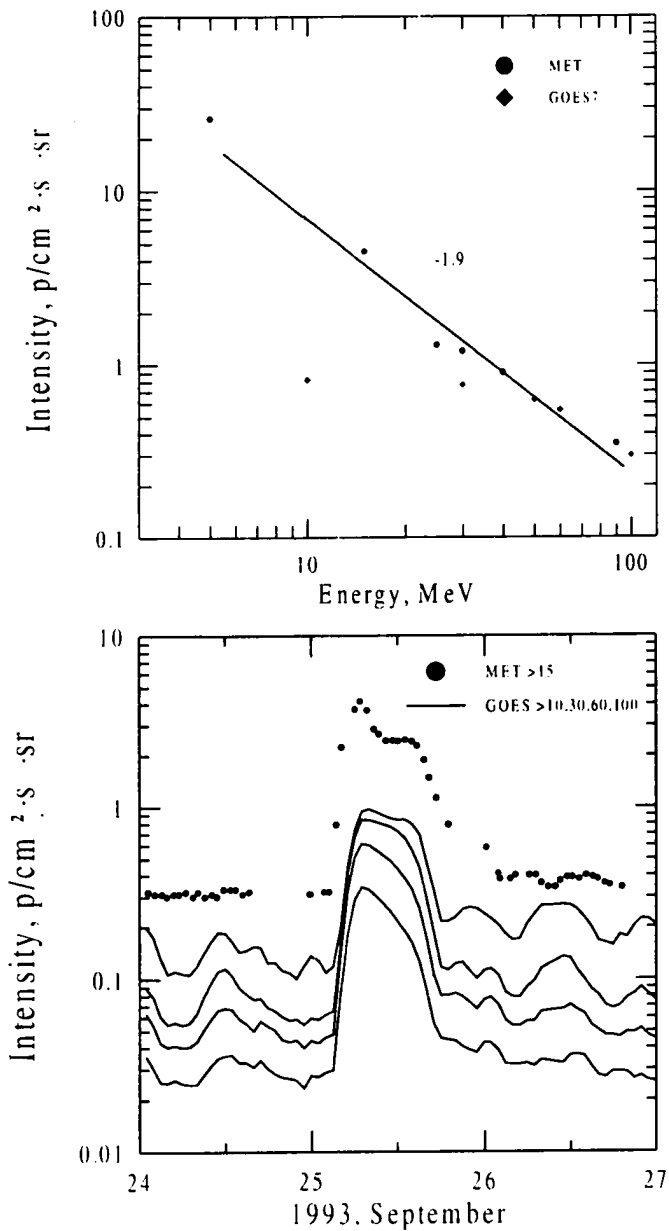
Source: ● flare 2154 N20 W48 2N AR 7500



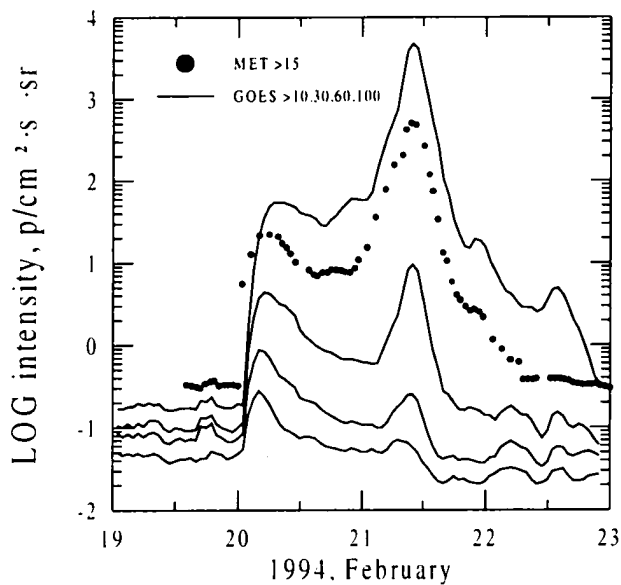
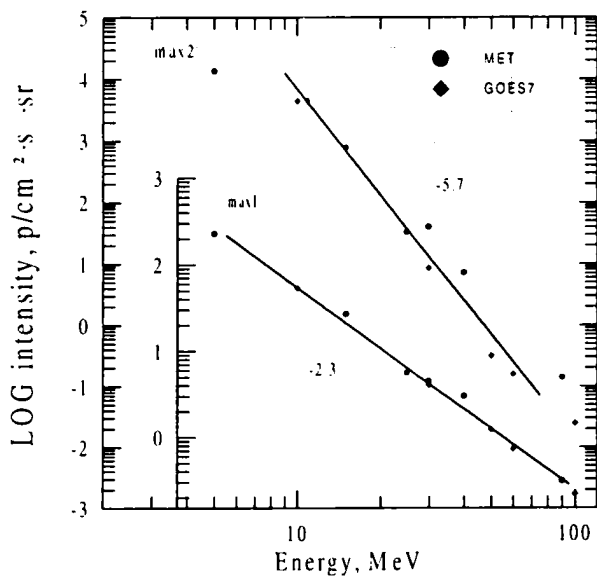
Source: ● flare 1354 S10 W30 2B AR 7518



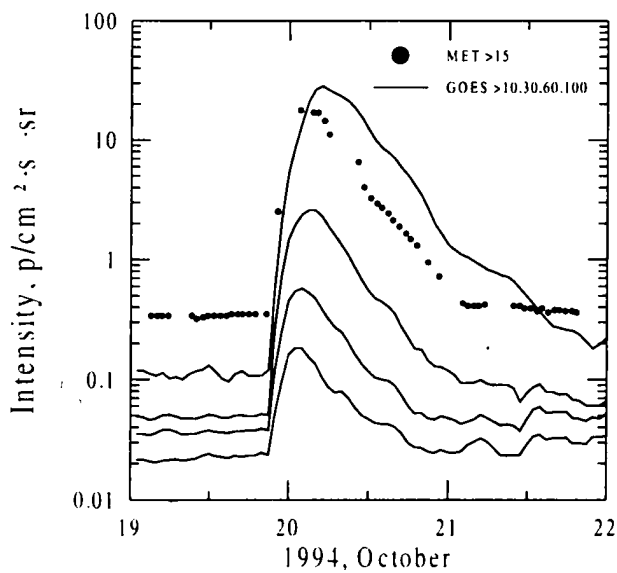
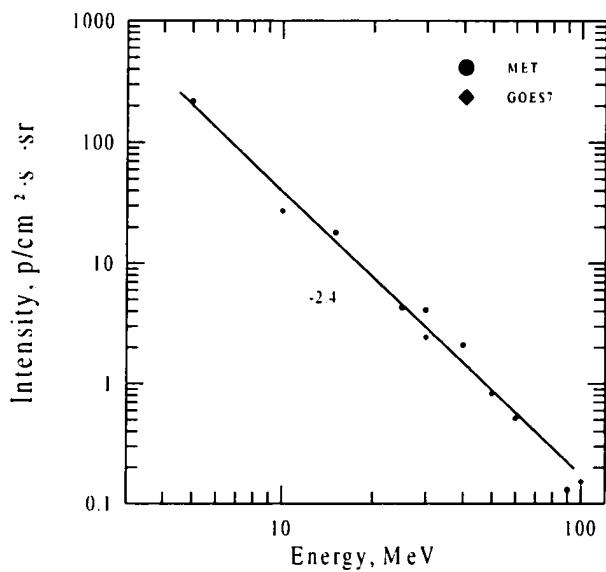
Source: unknown



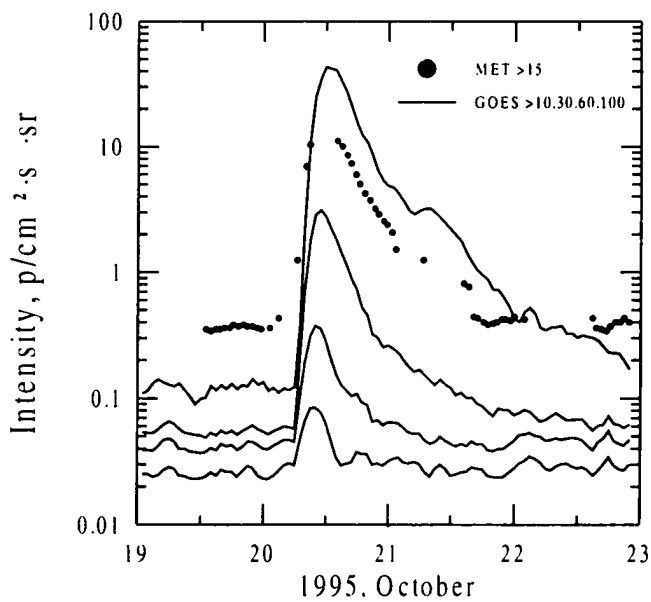
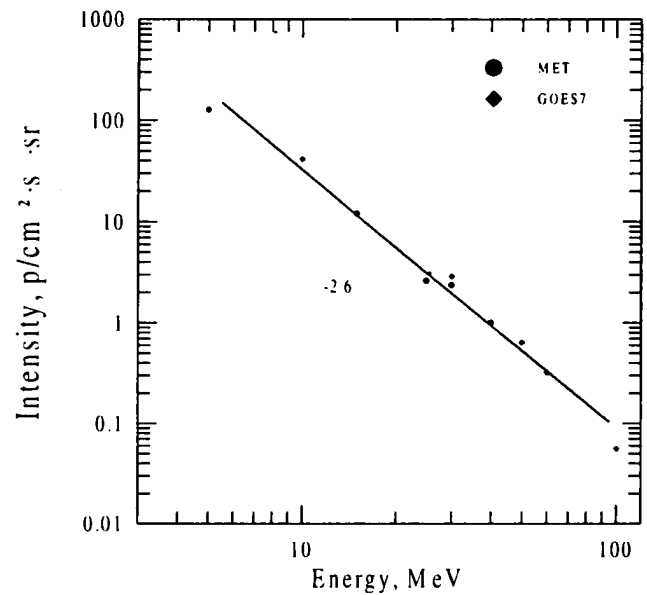
Source ● flare <0138 N09 W02 3B0 AR 7671
 ▲ SC 21d0901



Source: ● soft X-ray M3.2/microwave burst 2045-2351
 ○ flare 2235 N12 W24 1F AR 7790
 no flare patrol 2014-2233
 ▲ SC 1452. 22d0849



Source: ● flare 0553 S11 W53 IN AR 7912



PART 2

1987	October 16	●	AR 4866	To event 208		(000)
H _α	0950	0958	1027	N22 W09	1B	EFITY
12 keV	0950	1002	1010		M1.7	
15.4 GHz	<0956	0957	>1016		2.59	
8.8 GHz	<0956	0957	>1008	P8.8	2.86	
5 GHz	<0955	0957	>1005		2.54	
2.7 GHz	<0956	1000	>1001		2.18	
1.4 GHz	<0957	1010	>1001		2.04	
650 MHz	0955	0957.9	1002		2.39	
234 MHz	0953	0958	1201		2.44	
30 MHz	0955	0956	1040		4.51	
DS type III/V	0956		1009		3	
DS type IV	0956		1012		3	
DS type II	0957		1010		3	

1987	November 7	□	AR 4875	To event 209		(120)
H _α	2028	2030U	2045	N31 W90	1N	
2-12 keV	1950	2014	2123		M1.2	
8.8 GHz	1948	1955	>2034		1.70	
2.8 GHz	1948	1955	>2034		1.72	
	2033	2033	>2203			
1.4 GHz	1948	1955	2029		1.40	
DS type IV	2002		2021		2	
DS type S	2023		2046		1	
DS type II	2016		2021		2	

1988	January 2	●	AR 4912	To event 211		(120)
H _α	2111	2135	2432	S35 W18	3N	UZ
1-12 keV	2123	2145	0021		X1.4	
36-159 keV	2156:44	2156:51	2254:11		2.89E+05	
2.7 GHz	2100	2134			3.41	
100 MHz	2150E	2227	>2254		2.81	
DS type III	2125		2135		3	
DS type II	2132		2226		1.3	
	2237		2243		1	
DS type IV	2128		2242		3	
	2216		0902		2	
DS type IIIN	2237		2243		1	

1988	March 25	⊙	AR 4964, 4978	To event 212		(110)
H _α	2127	2128	2132	S28 W82	SF	
	2210	2218	2224	S26 W83	SF	
	2204	2206	2210	S21 E87	SF	
1-12 keV	2138	2154	2220		C4.5	
36-222 keV	2136:49	2138:10	2150:24		71476	
5 GHz	2138	2138	2139		1.60	
2.8 GHz	2136	2139	2151		1.91	
200 MHz	2136	2137.6	2149		3.34	

100 MHz	2137	2138.8		3.0
DS type III	2132		2134	3
	2205		2220	2
DS type V	2134		2137	3
	2138		2142	3
	2209		2218	3
DS type II	2136		2158	3

1988	March 25	●	AR 4965	To event 212	(110)
H _α				N21 W90	
1-12 keV	2141		2154	2220	C4.5
5 GHz	2138		2138	2139	1.6
2.7 GHz	2137		2138	2141	1.9
1.4 GHz	2138		2139	2140	1.9
610 MHz	2138		2139	2140	2.1
410 MHz	2137		2138	2140	2.4
245 MHz	2137		2138	2143	3.3

1988	June 29	○	AR 5058A	To event 213	(100)
H _α	0722		0737	0848	S19 E24 2B BEFIT
1-12 keV	0731		0741	0826	M6.5
15 GHz	0732		0737.6	0741	2.61
9.5 GHz	0724		0737.5	0850	2.76
5.9 GHz	0732		0737.6	0741	P5.9 2.84
3 GHz	0732		0737.5	0742	2.70
1.5 GHz	0732		0745.5	0955	3.14
950 MHz	0732		0745.1	0820	
650 MHz	0732		0745.6	0804	4.02
204 MHz	0735		0740	0745	4.30
100 MHz	0735		0739.5	0750	4.24
DS type III	0729			0732	2
DS type DCIM	0734			0743	2
DS type II	0739			0800	3
DS type IV	0741			0932	3

1988	June 29	●	AR 5060	To event 213	(100)
H _α	0903		0905	0929	S16 E23 2B EFHTXZ
12 keV	0901		0906	0914	M9.2
15 GHz	0902		0905	0913	2.63
9.5 GHz	0900		0903.8	0947	2.96
3 GHz	0903		0903.8	0914	2.41
1.5 GHz	0903		0904	0950	2.48
950 MHz	<0903		0903.7	>0911	3.72
204 MHz	0903		0903.8	0936	4.48
100 MHz	0903		0903.3	0930	4.34
DS type III/V	0903			0908	3
DS type II	0903			0924	3
DS type III	0915			0930	3

1988	June 30	Ø	AR 5060	To event 213	(100)
H _α	2015	2016	2119	S19 E27	1B
1-12 keV	2013	2019	2116		M4.1
36-131 keV	2021:26	2022:36	2032:00		73500
8.8 GHz	<2014	2016	>2400		3.45
2.8 GHz	2014	2016	2145		2.21
DS type cont.	1859		2259		1

1988	August 23	⊙	AR 5123A	To event 214	(010)
H _α	1757	1800	1831	N24 E88	SF Y
1-12 keV	1702	1804	2005		M2.4
36-131 keV	1656:39	1726:57	1737:12		21689
2.8 GHz	1656	1850	>2600		1.53
	1704	1707.5	1714		1.65
DS type II	1707		1718		2
DS type V	1801		1803		3

1988	August 23	Ø	AR 5122	To event 214	(010)
H _α	0820	0848	1200	N16 E31	2N CEFILST
1-12 keV	<0840	0856	0953		C7.2
15 GHz	0845	0936	1225		1.60
9.5 GHz	0836	0941	1140		1.45
5.9 GHz	0830	0940	1150		1.46
2.9 GHz	0839	0933.6	>1200		1.43
1.5 GHz	0835	0935.5	1345		1.61
650 MHz	0741	0848.4	>1202		1.08
204 MHz	0800	0925.2	1000		2.38
DS type III/V	0829		0831		2
DS type IIIN	0847		1604		2
DS type S	0857		0925		2
DS type I	0910		1025		2
DS type cont.	0918		0942		2

1988	September 27	●	AR 5171	To event 215	(000)
H _α	1606	1616	1717	S28 E66	2B EFI
1-12 keV	1605	1621	1701		M7.9
37-443 keV	1601:07	1613:35	1621:11		8.36E+05
15.4 GHz	<1610	1612.5	>1629		2.78
8.8 GHz	<1608	1613	>1624	P9	2.81
5 GHz	<1608	1613	>1620		2.67
2.7 GHz	1612	1616	1618		2.49
1.4 GHz	1613	1613	1618		1.98
410 MHz	1619	1619	1620		1.85
245 MHz	1614	1617	1618		2.89
DS type III	1614		1616		2
DS type II	1614		1638		3(2)

1988	October 3	Ø	AR 5171	To event 216		(000)
H _α	1449	1510	1542	S27 W17	2B	FUY
1-12 keV	1504	1512	1541		X3.2	
37-603 keV	1511:14	1511:18	1524:20		5.22E+06	
>300 keV	1512		1515			
35 GHz	1505	1508.2	1515		3.62	
19.6 GHz	1505	1508.2	1515	U0.6 P19	3.97	
8.8 GHz	1505	1508	1522		3.51	
5.2 GHz	1505	1508.2	1515		3.08	
2.8 GHz	1505	1509	1531		2.90	
1.5 GHz	1505	1508.7	1520		2.77	
610 MHz	1505	1510	1513		2.60	
410 MHz	<1505	1505	1513		3.69	
245 MHz	<1505	1506	1513		3.63	
DS type IN	1356		1547		2	
DS type IIIS	1423		1635		2	
DS type IV	1505		1718		3	
DS type III	1505		1513		3	
DS type II	1512		1519		3	

1988	October 3	Ø	AR 5171	To event 216		(000)
H _α	2322	2333	2416	S28 W19	2B	F
1-12 keV	2325	2336	2355		X1.1	
37-72 keV	2356:32	2356:41	2356:50		107	
15.4 GHz	<2331	2332	2342	/15	3.30	
8.8 GHz	<2328	2332	2356		2.89	
5 GHz	2331	2332	2340		2.54	
2.7 GHz	2331	2332	2344		2.34	
1.4 GHz	2331	2332	2333		2.32	
610 MHz	2332	2332	2333		1.70	
245 MHz	2337	2338	2338		2.53	
DS type III	2335		2339		2	
DS type IV	2346		0409		2	
DS type cont.	2348		0236		2	

1988	October 5	Ø	AR 5171	To event 216		(000)
H _α	0616	0620	0643	S30 W38	2B	F
1-12 keV	0613	0621	0646		M3.3	
37-225 keV	0613:27	0616:01	0625:20		2.13E+05	
15.4 GHz	0615	0616	0619		245	
11.8 GHz	0613	0616	0626	P12	2.65	
8.8 GHz	0614	0616	0621		2.62	
5.2 GHz	0613	0616.2	0626		2.48	
3 GHz	0613	0616.2	0624		2.08	
950 MHz	0617	0618.6	0624		0.74	
DS type III	0622		0623			

1988	October 12	●	AR 5175	To event 217		(000)
H _α	0456	0502	0613	S21 W68	2N	EUY
1-12 keV	0434	0511	0610		X2.5	
37-225 keV	0516:00	0516:01	0538:58		3.05E+05	
15.4 GHz	0457	0502	0644	/15	3.78	
8.8 GHz	0457	0502	0644		3.48	
2.7 GHz	0457	0500	0613		2.60	
610 MHz	0458	0501	0609		2.51	
200 MHz	0458	0459	0605		3.56	
100 MHz	0457	0502.3	0604		4.13	
DS type III	0442		0443		2	
DS type IV	0459		0514		2	

1988	October 13	●	AR 5175	To event 218		(000)
H _α	2030	2034	2049	S20 W88	SN	E
1-12 keV	2026	2033	2108		M6.4	
37-603 keV	2025:44	2030:47	2102:17		1.07E+06	
>300 keV	2029		2032			
15.4 GHz	2029	2030	2033		2.49	
8.8 GHz	2029	2029	2030		2.26	
5 GHz	2029	2031	2031		2.04	
2.8 GHz	2029	2030	2038		2.45	
610 MHz	2029	2029	2030		2.11	
245 MHz	<2028	2029	2032		3.59	
DS type IV	2028		2043		2	
DS type cont.	2041		2143		1	

1988	November 8	●	AR 5222	To event 219		(110)
H _α	1229	1232	1414	N17 W07	2N	F
1-12 keV	1229	1253	1327		C3.0	
38-226 keV	1227:52	1230:00	1243:38		26751	
9.5 GHz	1228	1253	1410		1.54	
5 GHz	<1246	1252	>1405		1.74	
3 GHz	1228	1252	1330		2.11	
1.4 GHz	<1228	1258	>1352		2.63	
810 MHz	1226	1242.7	1346		2.74	
610 MHz	<1229	1259	>1401		3.36	
410 MHz	<1230	1329	>1435		3.89	
234 MHz	1220	1336.4	>1520		4.70	
DS spikes	1228		1234		1	
	1246		1247		1	
DS type II	1230		1304		3	
DS type IV	1231		1404		3	
DS type IS cont.	1350		1530		2	

1988	November 13	●	AR 5227	To event 220		(010)
H _α	2247	2307	2405	S24 W27	1B	EFIUTUZ
1-12 keV	2254	2311	2410		M3.2	

38-74 keV	2246:31	2247:17	2247:54	831
38-415 keV	2250:20	2308:00	2309:23	5.73E+05
>300 keV	2305		2309	
15.4 GHz	<2256	2308	2346	3.18
2.7 GHz	2252	2309	2314	2.81
610 MHz	<2259	2307	>2331	3.00
410 MHz	<2304	2307	>2320	3.08
200 MHz	2304	2305.3	2351	2.85
DS type cont.	2246		2310	1
DS type III	2305		2310	3
DS type IV	2305		0038	2
DS type II	2308		2326	2

1988	December 13	☉	AR 5265	To event 222	((0)10)
H α	1029	1029	1046	N20 W40	1B
1-12 keV	1025	1031	1039		C7.6
52-628 keV	1027:19	1028:02	1029:58		44320
>300 keV	1028		1028		
15.4 GHz	<1027	1028	>1032		1.99
9.1 MHz	1027	1028	1031		2.40
5.9 GHz	1027	1028	1030	P6	2.64
5 GHz	<1027	1028	>1029		2.49
3 GHz	1027	1028.2	1031		2.11
1.5 GHz	1027	1028.1	1032		1.70
950 MHz	1027	1028.1	1032		1.11
650 MHz	1027	1028.5	1030		1.15
327 MHz	1028	1028.6	1029		1.95
204 MHz	1027	1028	1035		2.48
100 MHz	1027	1027.6	1035		4.30
DS type III	1027		1034		3

1988	December 14	☉	AR 5278	To event 223	((1)10)
H α	1337	1339	1349	N30 E59	1N EFHV
1-12 keV	1336	1339	1345		M2.1
52-518 keV	1336:09	1337:23	1343:33		1.61E+05
>300 keV	1337		1339		
35 GHz	1336	1337.3	1339		2.65
15.4 GHz	<1336	1337	>1339	P15	2.83
8.8 GHz	<1336	1337	>1338		2.64
5 GHz	<1336	1337	>1338		2.26
2.7 GHz	<1336	1337	>1338		2.23
1.5 GHz	1336	1337.2	1343		2.11
810 MHz	1336	1337.5	1341		2.29
610 MHz	1336	1336.9	1337		2.56
410 MHz	<1337	1339	>1339		2.83
234 MHz	1335	1341	1343		3.41
DS type III	1337		1345		2

1988	December 15	Ø	AR 5278, 5280		To event 223		(110)
H _α	0445	0502	0536		N27 E58	2B	EF
	0446	0501	0508		N28 E64	1N	F
1-12 keV	0445	0509	0653			X1.1	
52-102 keV	0446:04	0446:30	0447:26			359	
52-320 keV	0455:48	0503:52	0521:32			5.37E+05	
>300 keV	0503		0505				
15.4 GHz	<0500	0503	>0514			2.38	
8.8 GHz	<0458	0503	>0514	P9		2.60	
2.7 GHz	<0501	0504	>0510			2.57	
610 MHz	<0501	0503	>0510			2.04	
410 MHz	<0502	0503	>0506			2.32	
245 MHz	<0503	0503	>0505			3.70	
DS type III	0503		0507			3	
DS type II	0507		0537			3	
DS type IV	0505		0822			1	

1988	December 16	●	AR 5278		To event 224		(110)
H _α	0826	0833	0928		N27 E33	2B	EFIJKU
1-12 keV	0826	0846	1130			X4.7	
52-855 keV	0828:40	0833:28	1017:04			3.00E+07	
>0.3->10 MeV	0830		0930				
19.6 GHz	0827	0833	0932			3.77	
15.4 GHz	<0827	0833	>0900	[P15]		4.45	
8.8 GHz	<0826	0833	>0947			4.04	
5 GHz	<0826	0834	>1008			3.60	
2.7 GHz	<0826	0833	>0918			3.51	
1.4 GHz	<0827	0833	>1021			3.34	
950 MHz	0828	0832.3	1134			4.15	
610 MHz	0828	0833	1158			5.35	
410 MHz	<0827	0837	>1046			4.51	
234 MHz	0820	0842.5	1212			4.18	
100 MHz	0829	0834.6	1049			4.53	
DS type IV	0828		1138			3	
DS type II	0831		0845			3	

1988	December 17	Ø	AR 5278, 5280		To event 224		(110)
H _α	0451	0452	0522		N29 E28	SN	EFZ
	0457	0505	0532		N26 E42	SN	
	0504	0505	0513		N23 W04	SN	
	0510	0513	0525		S35 W16	SN	
1-12 keV	0454	0502	0527			M3.2	
52-230 keV	0455:24	0459:23	0507:27			1.01E+05	
52-102 keV	0512:54	0513:19	0513:47			238	
15.4 GHz	<0450	0459	>0522			2.45	
8.8 GHz	<0450	0504	>0526			2.40	
2.7 GHz	<0457	0500	>0513			2.45	
610 MHz	<0458	0515	>0528			3.26	

410 MHz	<0458	0500	>0537	3.83
200 MHz	0458	0501.3	0717	3.20
DS type III	0449		0513	3
DS type II	0500		0504	3
DS type IV	0506		0543	1

1988	December 17	Ø	AR 5272	To event 224	(110)
H _α	<1732	1736	2011	S14 W35	1B FUZ
1-12 keV	1733	1750	1919		M1.5
52-102 keV	1731:39	1735:32	1745:50		9246
DS type III	1927		1928		1

1988	December 27	○	AR 5285, 5292	To event 225	(000)
H _α	0527	0528	0542	N21 W36	SN D
	0520	0522	0544	S17 E17	SF EF
1-12 keV	0521	0533	0543		M1.3
52-144 keV	0520:52	0523:00	0523:07		10823
52-230 keV	0528:55	0529:19	0529:48		7215
15.4 GHz	<0522	0522			1.64
		0529			1.15
8.8 GHz	<0521	0522	>0536	P9	1.98
		0529			1.45
2.7 GHz	<0521	0522	>0533		1.41
		0529		P3	1.97
610 MHz	<0529	0529	>0530		2.15
200 MHz	0521	0529	0534		2.99
100 MHz	0521	0529	0533		>3.00
DS type III	0511		0532		2(3)
DS type S	0521		0544		2(3)
DS type II	0538		0545		2

1988	December 28	●	AR 5285	To event 226	(000)
H _α	2342	2343	2405	N20 W54	1B FH
1-12 keV	2341	2347	2358		M3.6
52-367 keV	2340:42	2342:59	2351:45		2.75E+05
>300 keV	2342		2344		
15.4 GHz	<2342	2343	>2400		3.00
8.8 GHz	<2342	2343	>2400	P9	3.20
5 GHz	<2341	2343	>2400		2.83
2.7 GHz	<2341	2343	>2346		2.59
610 MHz	<2341	2342	>2345		1.91
410 MHz	<2341	2342	>2343		3.00
200 MHz	2340	2343.2	2352		4.32
DS type III	2341		2351		2(3)
DS type II	2344		2400		2

1989	January 4	☉	AR 5303	To event 227		(000)
H α	1603	1753	1928	S20 W60	1N	EF
1-12 keV	1602	1615	1637		C8.0	
	1650	1659	1712		C9.0	
	1746	1805	2011		M4.7	
52-102 keV	1609:35	1612:12	1617:24		6833	
	1654:34	1657:12	1703:32		3183	
52-367 keV	1749:11	1752:58	1808:34		1.12E+05	
15.4 GHz	<1753	1757	1759		1.86	
8.8 GHz	<1752	1817			2.36	
5 GHz	<1750	1757	1803		2.56	
2.8 GHz	1652	1725	1953		1.45	
	1738	1758	1810	U0.6P3	2.66	
1.4 GHz	<1752	1757	1758		1.91	
410 MHz	<1750	1756	1758		2.18	
245 MHz	<1752	1757	1804		2.51	
DS type V	1752		1755		2	
DS type S	1752		1845		2	

1989	March 6	☉	AR 5395	To event 228		(220)
H α	1354	1416	1655	N33 E71	3B	EFY
1-12 keV	1313	1405	2035		>X12.5	
52-856 keV	1355:15	1402:59	1800:39		1.57E+08	
>0.3->10 MeV	1356		1543			
50 GHz	1355	1405	1535		4.54	
35 GHz	1355	1405	1535	P35	4.69	
19.6 GHz	1355	1405	1535		4.29	
15.4 GHz	<1354	1405	1626		4.52	
11.8 GHz	1355	1405	1535		3.92	
8.8 GHz	<1354	1405	2400		4.30	
5.2 GHz	1355	1405	1535		4.20	
5 GHz	<1354	1425	2400		4.38	
3.2 GHz	1355	1405	1535		3.95	
2.8 GHz	1356	1446	2046		4.26	
1.4 GHz	<1356	1405	2400		3.54	
		1420		P1.4	4.88	
610 MHz	<1358	1405	2400		3.74	
410 MHz	<1359	1406	2400		3.64	
234 MHz	1358	1402	1645		5.40	
DS type II	1403		1427		3	
	1441		1457		3	
DS type IV	1403		1427		3	
	1458		1536		3	

1989	March 7	☉	AR 5395	To event 228		(220)
H α	0519	0537	0638	N30 E69	1N	EFIKU
1-12 keV	0556	0600	0918		M2.0	
52-143 keV	0544:55	0551:35	0554:54		13411	

52-856 keV	0555:14	0557:46	0603:11		5.43E+05
>0.3->10 MeV	0557		0558		
15 GHz	0542	0633.3	0714		1.28
9.1 GHz	0534	0608.9	1124	P9	1.70
5.9 GHz	0543	0632.2	0743		1.48
2.9 GHz	0533	0613	1033		1.38
950 MHz	0545	0606	0619		0.78
15.4 GHz	<0557	0557	0601	U3/15	3.38
9.1 GHz	0557	0557.8	0602		3.10
5 GHz	<0557	0557	0558		2.71
3 GHz	0557	0557.9	0559		2.46
1.4 GHz	<0557	0557	0558		3.30
950 MHz	0557	0558.1	0602		3.81
650 MHz	0545	0557.9	0614		3.96
500 MHz	0557	0557.5	0600		3.79
234 MHz	0557	0557.8	0559		3.48
DS type III	0550		0557		3
DS type II	0554		0615		1
DS type III/N	0640		1644		2
DS type IS	0703		1550		2

1989	March 7	☉	AR 5395	To event 228	(220)
H _α	1436	1453	1538	N31 E65	2B EFHK
1-12 keV	1449	1458	1509		X1.8
52-856 keV	1450:38	1454:40	1506:42		4.03E+06
>300 keV	1452		1456		
15.4 GHz	<1451	1454	1456	U0.6/15	3.30
8.8 GHz	<1451	1454	1456		3.11
5 GHz	<1453	1454	1456		2.43
2.8 GHz	1452	1455.4	1502		2.28
1.5 GHz	1452	1454.5	1610		2.26
600 MHz	1452	1455.5	1612		1.78
245 MHz	<1454	1455	1457		2.11
127 MHz	1452	1454	1458		>4.00
DS type cont.	1448		2120		1
DS type III/V	1451		1459		3

1989	March 8	☉	AR 5395	To event 228	(220)
H _α	0825	0830	0920	N34 E55	2B BDEFK
1-12 keV	0825	0837	0959		M15.7
52-231 keV	0825:17	0832:38	0848:24		4.67E+05
15.4 GHz	<0828	0832	0844	/15	2.69
8.8 GHz	<0827	0832	0844		2.56
5 GHz	<0829	0832	0843		2.18
3 GHz	0827	0832.8	0852		1.81
1.4 GHz	0754	0833.2	0900		1.26
950 MHz	<0820	0833	0904		0.94
	0840	0840.5	0842		1.81

245 MHz	0834	0835	0836	2.08
15.4 GHz	<0856	0856	0857	2.43
8.8 GHz	<0856	0856		2.38
5 GHz	<0856	0856		1.90
950 MHz	0855	0856.5	0857	1.20
DS type S	0813		0852	3
DS type III	0843		0852	3

1989	March 9	Ø	AR 5395	To event 228	(220)
H _α	1515	1532	1644	N30 E38 4B	FHK
1-12 keV	1523	1538	1638		X4.0
52-630 keV	1516:40	1535:55	1545:16		1.54E+07
15.4 GHz	<1525	1525>0	1530	/15	2.38
9.5 GHz	1517	1526.5	1600		2.32
5 GHz	<1522	1523	1531		2.04
2.8 GHz	1519	1525.6	1543		2.03
1.5 GHz	1501	1530.9	1555		1.89
610 MHz	<1528	1530	>1530		2.49
245 MHz	<1528	1546	1548		2.98
DS type V	1519		1537		3
DS type S	1528		1541		3
DS type III	1529		1541		3

1989	March 10	Ø	AR 5395	To event 229	(230)
H _α	1837	1850	>2158	N32 E22 3B	KUY
1-12 keV	1858	1922	0137		X4.5
52-857 keV	1903:28	1912:38	2124:22		6.43E+07
>0.3->10 MeV	1903		1949		
15.4 GHz	<1858	1912	2120	/15	4.40
8.8 GHz	<1858	1903	2113		4.34
		1934			4.30
5 GHz	<1859	1943	2120	[P5]	4.40
2.7 GHz	<1859	2011	2120	[P3]	4.00
1.4 GHz	<1902	2013	2120		3.61
610 MHz	<1909	1933	2110		3.11
410 MHz	<1910	1929	2120		3.04
245 MHz	<1855	1856	1857		3.90
	<1914	1920	2120		4.08
DS type S	1749		1918		3
DS type V	1813		1815		2
DS type IV	1855		1901		3
	1918		2119		3
DS type II	1920		2119		3
DS type cont.	2133		>2228		3

1989	March 11	Ø	AR 5395	To event 229	(230)
H α	1933	1940	2016	N27 E10	2B F
1-12 keV	1933	1938	2018		X1.3
52-231 keV	1957:22	1957:32	1958:13		1795
15.4 GHz	<1931	1935	>1950	U1.4/15	3.08
8.8 GHz	<1826	1826	>1830		2.08
	<1931	1935	>1947		2.92
5 GHz	<1934	1935	>1947		2.72
2.8 GHz	1726	1936.4	1947		2.45
1.4 GHz	<1934	1936	>1941		2.41
610 MHz	<1847	1847	1848		2.63
	1934	1936	>1945		3.15
410 MHz	<1847	1847	>1848		3.79
	<1934	1935	>1941		3.62
245 MHz	<1825	1826	1826		3.34
	<1847	1848	>1848		3.46
	<1934	1935	>1944		4.26
DS type cont.	1500		2224		2
DS type III	1847		1848		3
DS type V	1933		1937		3

1989	March 13	Ø	AR 5395	To event 229	(230)
H α	0259	0301	0413	N29 W02 3N	EFHIKLS UE
		0320			
1-12 keV	0257	0327	0423		X1.2
52-367 keV	0303:37	0316:51	0402:11		2.43E+06
15.4 GHz	<0259	0317	>0324		3.04
8.8 GHz	<0259	0317	>0324	P8.8	3.15
5 GHz	<0258	0317	>0324	P5	2.76
	0332	0335	>0344		2.62
2.7 GHz	<0258	0314	>0324		2.58
1.4 GHz	<0258	0300	>0309		2.62
	<0314	0317	>0320		2.23
610 MHz	<0259	0301	>0308		2.32
	<0312	0317	>0320		2.34
	<0326	0331	>0335		2.85
410 MHz	<0258	0258	>0308		2.73
	<0312	0318	>0320		2.68
	<0326	0327	>0341		3.04
245 MHz	<0258	0300	>0308		2.88
	<0312	0317	>0318		2.53
	<0330	0331	>0332		3.74
200 MHz	0300	0331	0347		3.74
100 MHz	0324	0331	0344		4.4

1989	March 17	●	AR 5395	To event 230		(320)
H α	1729	1737	1935	N33 W61	2B	FKMZ
1-12 keV	1720	1744	1856		X6.5	
52-857 keV	1727:40	1736:06	1802:20		9.62E+07	
>0.3->10 MeV	1731		1744			
15.4 GHz	<1721	1735	>1810	/15	4.30	
8.8 GHz	<1734	1735	>1740		3.88	
5 GHz	<1731	1738	>1741		4.08	
2.8 GHz	1734	1739	1916		3.59	
1.4 GHz	<1735	1739	>1753		3.18	
610 MHz	<1735	1737	>1749		2.71	
410 MHz	<1735	1737	>1748		2.88	
245 MHz	<1735	1736	>1743		3.59	
DS type IV	1731		1758		3	
DS type II	1749		1807		3	
DS type cont.	1758		1919		2	

1989	March 23	●	AR 5409	To event 231		(110)
H α	<1925	1937	>2201	N18 W28	3B	FKUY
1-12 keV	1920	1959	2215		X1.5	
52-630 keV	1930:09	1940:31	2009:45		1.40E+06	
>300 keV	1936:00		1948:00			
15.4 GHz	<1931	1940	>2042		3.04	
8.8 GHz	<1929	1940	>2040		3.40	
5 GHz	<1928	1940	>2039	P5	3.45	
2.8 GHz	1913	1941	2300		3.24	
1.4 GHz	<1929	1951	>2000		3.32	
610 MHz	<1932	1940	2400		2.78	
		2003			3.72	
410 MHz	<1935	1938	2400		2.32	
		2026			2.45	
245 MHz	<1924	1925	>2035		3.36	
		1946			2.26	
DS type V	1918		1926		3(2)	
DS type IV	1922		2005		3	
DS type II	1939		2005		3	
DS type cont.	2005		2210		2	

1989	April 9	●	AR 5441	To event 232		(010)
H _α	0044	0053	0236	N35 E28	3N	EFIJSTU'Z
1-12 keV	0042	0105	0200		X3.5	
52-102 keV	0118:40	0119:51	0145:05		10084	
15.4 GHz	<0045	0058	0157	U2.7/15	3.62	
8.8 GHz	<0042	0058	0204		3.52	
2.7 GHz	<0044	0103	0158		3.04	
1.4 GHz	<0044	0050	0127		3.34	
410 MHz	<0050	0051	0055	U0.4	1.56	
200 MHz	0054	0054.5	0055		3.70	

DS type IV	0045	0200	3
DS type cont.	0107	0126	1

1989	April 10	☉		To event 233	(220)
H _α	<1819		>2220	N40 W08	SDF
1-12 keV	2134	2323	>2357		M1.2
52-102 keV	2117:26	2117:32	2118:52		226
2.7 GHz	2120	2440	2520		1.49

1989	April 22	○	AR 5451	To event 234	(010)
H _α	0332	0334	0345	N12 W38	SN EF
1-12 keV	0330	0336	0350		M1.2
52-231 keV	0330:44	0332:07	0335:02		69044
15.4 GHz	<0332	0332			1.15
5 GHz	<0330	0332	0337	U1.4 P5	1.91
2.7 GHz	<0330	0332	0334		1.72
1.4 GHz	<0331	0332	0334		1.41
500 MHz	0331	0331.7	0337	U0.4	2.33
100 MHz	0330	0331.1	0332		2.96
DS type III	0330		0331		2
DS type V	0331		0332		1
DS type II	0347		0351		2

1989	April 22	○	AR 5451	To event 234	(010)
H _α	0545	0546	0607	N12 W39	1N EV
1-12 keV	0544	0549	0553		C6.0
52-102 keV	0552:20	0552:53	0553:08		893
15.4 GHz	<0545	0546	0546		1.23
9.1 GHz	0545	0545.9	0547		1.36
5 GHz	<0544	0546	0546	U0.6-0.9 P5	1.88
2.7 GHz	<0544	0546	0547		1.83
950 MHz	0544	0546	0605		1.72
200 MHz	0544	0544.2	0556		4.20
100 MHz	0545	0545.6	0556		4.36
DS type III/V	0544		0552		3
DS type II	0600		0605		1

1989	May 4	○	AR 5464	To event 235	(120)
H _α	1032	1113	1205	S22 W33	2N EFHIJKT
1-12 keV	1106	1115	1141		M5.4
52-520 keV	1105:30	1113:50	1135:55		3.70E+05
>300 keV	1113		1117		
35 GHz	1113	1114	1117		2.27
11.8 GHz	1113	1114	1117		2.59
8.4 GHz	1113	1114	1117		2.63
5.2 GHz	1113	1114	1117	P5.2	2.70
3 GHz	1106	1115	1123		2.51
950 MHz	1112	1114.2	1129		2.69

234 MHz	1112	1114	1127	3.48
100 MHz	1106	1114.6	1126	4.27
DS type III	1109		1115	3
DS type IV	1109		1172	3
DS type II	1114		1124	3(1)

1989	May 5	Ø	AR 5470	To event 235	(120)
H _α	0720	0731	0844	N30.E04	2B EFIUWY
1-12 keV	0721	0737	0911		X2.4
52-857 keV	0721:16	0730:37	0824:17		4.48E+06
>300 keV	0727		0735		
50 GHz	0726	0731	0740		2.98
15.4 GHz	<0725	0728	0815		3.49
9.1 GHz	0722	0730.9	0744	P9	3.57
5.9 GHz	<0721	0731.1	0740		3.54
3 GHz	0721	0731.1	0827		3.03
1.4 GHz	<0722	0729	>0758		3.15
950 MHz	0722	0729.7	0752		2.46
500 MHz	0725	0734.5	0813		2.67
410 MHz	<0727	0734	>0758		2.48
200 MHz	0724	0728.8	0801		3.61
100 MHz	0726	0730.4	0759		4.16
DS type III	0726		0746		3
DS type IV	0727		0940		2
DS type II	0745		0748		2
DS type IS	0820		1707		3

1989	May 6	Ø	AR 5464	To event 235	(120)
H _α	1442	1445	1535	S20 W65	SF FHK
1-12 keV	1442	1459	1616		M1.7
52-102 keV	1140:52	1441:05	1442:26		408
8.8 GHz	<1449	1500	>1501		1.71
5.2 GHz	1445	1451.2	1458		1.92
2.8 GHz	1441	1500	>1506		2.08
DS type III	1439		1440		1
	1455		1456		1
DS type II	1500		1519		3
DS type IV	1502		1514		3
DS type cont.	1520		1706		1

1989	May 20	□	To event 236	(110)
H _α	0917		0926	S22 W90 BSL
	0917		0936	N12 W90 BSL
1-12 keV	0919	0924	0929	C1.9
	0929	1115	1308	C5.2
52-631 keV	0938:02	0938:25	1009:06	83759
15 GHz	0918	0921.7	0927	1.18
9.5 GHz	0919	0921.5	>0949	1.28

5.2 GHz	0919	0921.3	0945	1.65
3.2 GHz	0919	0921.3	0945	1.94
1.5 GHz	0918	0922.5	1155	2.18
950 MHz	0919	0922.3	0950	1.99
536 MHz	0920	0926.5	1020	2.14
234 MHz	<0922	0923.6		4.04
127 MHz	0921	0922	0940	3.85
DS type II	0921		0927	3(1)
	0930		0955	2
DS type III	0926		0932	2
DS type IV	0922		0956	2
DS type cont.	0934		1530	1

1989	May 22	○	AR 5497	To event 236	(110)
H _α	0000	0024	0204	S21E15	2B EFKU
1-12 keV	0017	0037	0200		M5.7
15 GHz	0028	0044	>0050		1.92
8.8 GHz	<0019	0043	>0104		1.99
5 GHz	<0015	0020	>0109		2.15
2.7 GHz	<0015	0029	>0058		2.20
1.4 GHz	<0018	0056	>0140		3.40
		0124			3.11
610 MHz	<0018	0137	>0204		4.08
410 MHz	<0016	0138	>0156		4.30
245 MHz	<0016	0138	>0138		3.86
100 MHz	0016	0040.3	0700		2.69
DS type cont.	0027		0037		2
	0120		0355		2
DS type IV	0037		0657		2
DS type II	0046		0055		2

1989	June 14	○	AR 5521	To event 237	((0)00)
H _α	1350	1355	1414	S14 W78	1N E
1-12 keV	1342	1345	1419		M2.7
52-858 keV	1352:19	1352:43	1357:25		1.49E+05
>0.3->10 MeV	1352:00		1354:00		
19.6 GHz	1352	1352.4	1353		2.65
11.8 GHz	1352	1352.4	1353		2.68
8.4 GHz	1352	1352.4	1353	P9	2.82
2.8 GHz	1352	1352.9	>1403		2.64
1.4 GHz	<1352	1353	>1400		2.26
610 MHz	<1352	1352	>1357		1.82
410 MHz	<1352	1352	>1400		2.28
234 MHz	1352	1352.8	>1400		3.30
DS type III/V	1349		1351		3
DS type III	1352		1356		3
DS type IV	1352		1406		3
DS type II	1354		1406		1

1989	June 18	☉	AR 5536	To event 238		(100)
H α	1440		1444	1506	N12 W30	SF FH
2.8 GHz	1445		1446.5	1452		1.54
245 MHz	<1449		1449	>1450		2.23
127 MHz	1442		1448.5	1456		>2.78
DS type III	1440			1440		1
DS type S	1442			2400		2
DS type II	1450			1513		2

1989	June 19	☉	AR 5528	To event 238		(100)
H α	0529		0540	0640	N15 W58	1N EFZ
1-12 keV	0532		0556	0703		M2.5
52-231 keV	0530:12		0542:17	0552:53		1.05E+05
15.4 GHz	<0537		0542	>0559		2.26
8.8 GHz	<0530		0542	>0608	P5	2.58
5 GHz	<0531		0542	>0558		2.49
2.8 GHz	0535		0543.8	0554		2.38
1.4 GHz	<0532		0546	>0550		1.79
950 MHz	0530		0538	0612		1.60
500 MHz	0528		0542.3	0641		1.96
200 MHz	0532		0609	>0940		2.43
DS type cont	0538			0929		1
DS type III	0557			0557		2

1989	June 20	●	AR 5528	To event 239		(000)
H α	2153		2212	2315	N17W82	1N DIJKY
1-12 keV	2153		2214	2350		M9.3
15.4 GHz	<2156		2159	>2219		2.53
8.8 GHz	<2155		2159	>2214	P9	2.88
5 GHz	<2155		2159	>2214		2.74
2.7 GHz	<2155		2157	>2218	P3	2.38
1.4 GHz	<2155		2157	>2208		2.20
610 MHz	<2157		2200	>2201		1.62
200 MHz	2156		2209.2	0054		1.68
100 MHz	2207		2222	2312		1.90
DS type S	2206			2219		1
DS type III	2207			2207		1
DS type cont	2220			2318		2

1989	June 20	☉	AR 5528	To event 239		(000)
H α	1455	1458	1620	N24 W70	3N	AFIKU'VYZ
1-12 keV	1448	1508	1720		X1.6	
52-419 keV	1454:28	1457:28	1522:11		3.96E+05	
>300 keV	1455:00		1457:00			
15.4 GHz	<1455	1457	>1502		2.32	
8.8 GHz	<1455	1457	>1515		2.62	
5 GHz	<1455	1457	>1515	P5	2.84	
2.7 GHz	<1455	1458	>1511		2.77	

1.4 GHz	<1455	1458	>1504	2.81
610 MHz	<1456	1459	>1513	1.98
234 MHz	1450	1450.3	1452	3.58
DS type III	1445		1451	2
DS type IV	1445		1450	2
DS type III	1501		1508	2
DS type cont.	1525		1640	1

1989	June 28	○	AR 5569	To event 240	(010)
H _α	1808	1818	>1914	N20 E04	1N EFUZ
1-12 keV	1805	1822	1859		M2.4
52-102 keV	1819:27	1819:48	1824:26		9834
15.4 GHz	<1814	1816	>1820		2.08
8.8 GHz	<1812	1817	>1828		2.46
5 GHz	<1812	1817	>1828	P5	2.64
2.8 GHz	1819	1815.7	1826		2.64
1.4 GHz	<1813	1817	>1826		3.62
410 MHz	<1908	1909	>1909		2.30
245 MHz	<1908	1909	>1909		2.15
DS				no event	

1989	June 29	○	AR 5555	To event 240	(010)
H _α	0257	0309	0438	N30 W26	2N EFJKUW
1-12 keV	0300	0329	0500		C7.3
52-102 keV	0254:23	0254:50	0255:01		231
3 GHz	0309	0339.7	0340		1.04
1.4 GHz	<0257	0258			1.20
610 MHz	<0254	0306	>0328		1.43
245 MHz	<0302	0312	>0317		2.08
DS type cont.	0255		0536		2
DS type III	0301		0302		2
DS type S	0304		0316		2

1989	June 29	●	AR 5555	To event 241	(010)
H _α	2057	2114	2342	N30 W41	1N DFY
1-12 keV	2103	2127	2314		M3.7
52-859 keV	2109:23	2112:14	2147:25		6.70E+05
>300 keV	2110:00		2117:00		
15.4 GHz	<2107	2114	>2139		2.59
8.8 GHz	<2104	2114	>2144		2.95
5 GHz	<2103	2114	>2144	P5	3.08
2.8 GHz	2042	2114.5	2154		2.99
1.4 GHz	<2103	2122	>2143		2.54
610 MHz	<2104	2109	>2129		1.96
410 MHz	<2107	2111	>2124		1.91
245 MHz	<2107	2113	>2121		2.56
100 MHz	2106		2140		>3.00
DS type IV	2103		2204		3

1989	June 30	Ø	AR 5572	To event 242	(010)	
H _α	0609	0615	0626	S17 E88	IN	AD
1-12 keV	0600	0616	0923		M3.6	
52-231 keV	0711:05	0724:13	0728:09		57882	
15.4 GHz	<0608	0610	>0612		1.81	
8.8 GHz	<0607	0610	>0616		1.91	
5 GHz	<0604	0610	>0619	P5	2.08	
2.7 GHz	<0604	0610	>0618		1.85	
950 MHz	0607	0612.4	0620		1.11	
650 MHz	0608	0631.3	0830		0.60	
DS type II	0718		0724		2	

1989	June 30	Ø	AR 5569, 5572A	To event 242	(010)	
H _α	1450	1452	1532	N20 W23	IN	EFIKZ
	1452	1457	1521	S17 E73	SF	EF
1-12 keV	1450	1502	1513		M2.5	
52-689 keV	1454:54	1500:36	1508:00		1.01E+05	
>300 keV	1500	1501				
15.4 GHz	<1458	1500	>1503		2.56	
8.8 GHz	<1500	1500	>1503		2.43	
5 GHz	<1500	1500	>1502		2.41	
2.8 GHz	1500	1500.9	1600		2.67	
610 MHz	<1500	1506	1508		2.72	
410 MHz	<1500	1501	>1502		2.34	
245 MHz	<1501	1501	>1502		2.04	
DS				no event		

1989	June 30	Ø	AR 5569	To event 242	(010)	
H _α	1736	1738	1816	N20 W24	SN	EFKU
		1747				
1-12 keV	1736	1739	1750		M2.1	
52-231 keV	1737:03	1737:45	1740:49		20907	
15.4 GHz	<1737	1737	>1738		1.86	
8.8 GHz	<1746	1746			1.95	
5 GHz	<1737	1737	>1738		2.00	
2.8 GHz	1737	1737.8	1740		1.45	
	1746	1746.2	1748		1.41	
410 MHz	<1743	1746	>1746		3.68	
245 MHz	<1743	1746	>1748		3.38	
DS type V	1743		1748		3	
DS type III	1743		1747		3	

1989	July 25	●	AR 5603	To event 243	((1)12)	
H _α	0839	0843	0904	N26 W85	1B	AEH
1-12 keV	0838	0844	0908		X2.6	
15.4 GHz	<0838	0841	>0853	U0.8/15.4	3.20	

9.1 GHz	0838	0842.7	0848	2.98
5 GHz	<0838	0840	>0848	2.54
3 GHz	0839	0840.5	0849	2.34
1.4 GHz	<0839	0842	>0848	2.15
810 MHz	0839	0842.5	0857	2.03
500 MHz	0841	0841.5	>0850	3.81
204 MHz	0841	0842	0849	3.98
100 MHz	0841	0845.2	0853	3.99
30 MHz	0841	0850.3	0900	>4.08
DS type II	0841		0905	3
DS type III	0839		0845	3
DS type IV	0845		0934	3

1989	August 12	●	AR 5629	To event 244	(330)
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H _α	1357	1423	1632	S16 W38	2B	EFKU
1-12 keV	1358	1427	1802		X2.6	
52-420 keV	1418:27	1421:34	1517:43		2.90E+06	
>300 keV	1418		1425			
15.4 GHz	<1358	1408	>1557	2.8/15.4	3.84	
8.8 GHz	<1357	1409	>1547		3.72	
2.8 GHz	1358	1409	1433		3.55	
1.4 GHz	<1400	1411	>1537		3.70	
610 MHz	<1407	1422	>1533		3.46	
410 MHz	<1408	1424	>1533		3.86	
245 MHz	<1409	1431	>1557		3.98	
30 MHz	1418	1444	>1606		3.90	
DS type II	1415		1422		3	
DS type III	1401		1405		3	
	1408		1410		2	
	1440		1442		2	
	1443		1457		3	
DS type IV	1406		1535		3	
DS type cont.	1530		2327		2	

1989	August 14	Ø	AR 5629	To event 244	(330)
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H _α	0031	0034	0302	S15 W60	3B	EFIJKTU
1-12 keV	0039	0053	0353		X3.5	
52-860 keV	0039:26	0043:12	0108:31		1.39E+07	
>300 keV	0042		0052			
15.4 GHz	<0040	0044	>0222	/15.4	4.08	
8.8 GHz	<0033	0044	>0207		3.73	
5 GHz	<0040	0043	>0222		3.41	
2.7 GHz	<0042	0044	>0140		3.30	
500 MHz	0042	0051.5			3.18	
245 MHz	<0043	0044	>0222		2.96	
100 MHz	0044	0044.7	0412		3.48	
1.4 GHz	<0041	0122	>0208		3.65	
610 MHz	<0041	0122	>0206		3.46	

500 MHz	0042	0122.8	>0218	3.68
410 MHz	<0042	0125	>0222	3.89
245 MHz	<0042	0122	>0210	4.00
DS type II	0045		0047	3
DS type IV	0048		0806	2
DS type V	0044		0046	2

1989	August 15	●	AR 5629	To event 245	(220)
H _α	0142	0217	0405	S16 W73 1N	AEFKY
1-12 keV	0215	0315	0523		X1.0
52-860 keV	0218:32	0257:33	0449:32		4.89E+06
>300 keV	0235		0415		
2.8 GHz	0134	0147.4	>0208		1.61
1.4 GHz	<0138	0148	>0149		1.48
500 MHz	0136	0142.5	0154		1.93
410 MHz	<0139	0143	>0150		1.83
200 MHz	<0142	0145	>0147		2.04
15.4 GHz	<0229	0258	>0639		4.34
8.8 GHz	<0225	0302	>0444	[U2.7 P8.8]	4.45
5 GHz	<0220	0259	>0641		4.32
2.7 GHz	<0218	0304	>0631		4.26
1.4 GHz	<0220	0313	>0446		4.89
950 MHz	<0251	0340	>0527		4.23
610 MHz	<0238	0345	>0539		4.43
410 MHz	<0234	0344	>0521		3.70
200 MHz	<0239	0256.8	>0711		1.66
100 MHz	<0236	0237.6	>0325		3.15
15.4 GHz	<0425	0435	>0513		2.52
8.8 GHz	<0412	0412			2.20
	<0415	0420	>0527		2.85
5 GHz	<0405	0412	>0526		3.28
2.7 GHz	<0404	0412	>0526	[U1.4 P2.7]	3.56
1.4 GHz	<0404	0412	>0526		3.18
610 MHz	<0408	0413	>0526		4.30
410 MHz	<0404	0405	>0513		2.60
DS type IV	0215		0311		2

1989	August 16	●	AR 5629	To event 246	(333)
H _α	0058	0107	0216	S15 W85 2N	AEFHIKWY
1-12 keV	0054	0118	0556		>X12.5
52-860 keV	0123:04	0123:31	0658:14		4.84E+07
>0.3->10 MeV	0123		0140		
15.4 GHz	<0056	0113	>0226	U1.4/15.4	4.58
8.8 GHz	<0055	0119	>0152		4.36
5 GHz	<0056	0120	>0225		4.04
2.7 GHz	<0057	0106	>0159		3.78
1.4 GHz	<0059	0104	>0143		3.36
610 MHz	<0101	0113	>0143		3.97
410 MHz	<0101	0116	>0139		4.00

200 MHz	0101	0106.1	0138	4.00
100 MHz	0101		0151	>3.00
DS type IV	0103		0129	3
15.4 GHz	<0152	0152	>0205	2.43
8.8 GHz	<0152	0152	>0159	2.63
5 GHz	<0152	0152	>0157	2.54
2.7 GHz	<0152	0156	>0158	2.43
1.4 GHz	<0152	0153	>0155	2.26
610 MHz	<0152	0152	>0153	1.82

1989	August 17	●	AR 5629		To event 247		(230)
H _α	0132		0135	0139	S17 W88	SN	Y
1-12 keV	0033		0122	0729		X2.9	
52-860 keV	0027:08		0113:21	0516:42		1.03E+07	
>300 keV	0048			0217			
15.4 GHz	<0034		0034	>0043		2.38	
8.8 GHz	<0033		0034	>0048		2.97	
5 GHz	<0033		0034	>0048	P5	3.28	
2.7 GHz	<0033		0034	>0048		2.88	
1.4 GHz	<0034		0040	>0153		2.11	
			0050			3.11	
610 MHz	<0049		0058	>0126		2.64	
410 MHz	<0049		0100	>0125		2.69	
245 MHz	<0048		0057	>0111		3.08	
100 MHz	0050		0052.2	0112		3.64	
15.4 GHz	<0034		0114	>0211	/15.4	4.56	
8.8 GHz	<0048		0114	>0210		4.45	
5 GHz	<0033		0114	>0211		4.11	
2.7 GHz	<0029		0115	>0209		3.75	

1989	August 19	■	AR 5629	○ AR 5645	To event 248		(220)
H _α	1911		1946	>2127	N27 E02	1N	EFK
1-12 keV	1915		2007	2130		C8.2	
52-102 keV	1838:42		1839:09	1839:24		353	
	1918:36		1919:10	1920:14		914	
2.8 GHz	1838		1838.7	1839		1.85	
	1905		1947	2115		1.40	
610 MHz	<1939		1942	>2003		3.04	
DS type II	1948			2006		2	
DS type cont.	2004			0530		2	

1989	September 3	●	AR 5669		To event 250		(010)
H _α	1428		1431	1458	S17 E19	1B	FU
1-12 keV	1427		1432	1602		X1.2	
15.4 GHz	<1427		1430	>1451	[U5-8/15.4]	3.54	
8.8 GHz	<1427		1430	>1451		3.36	
5 GHz	<1428		1430	>1442		3.40	
2.7 GHz	<1428		1429	>1451		3.68	

1.4 GHz	<1429	1430	>1433	2.00
DS type cont.	1104		1737	3

1989	September 4	Ø	AR 5669	To event 250	(010)
H _α	0857	0903	0945	S18 E20	1B EFHJK
1-12 keV	0856	0904	0914		X1.1
15 GHz	0857	0900.2	0909		2.88
9.3 GHz	0856	0859.6	0915	[U0.6] P9.3	2.96
5.9 GHz	0850	0859.5	0906		2.94
		0903.7			2.25
2.9 GHz	0856	0859.5	0908		2.60
		0903.7			2.56
1.5 GHz	0856	0904	0930		2.78
950 MHz	0857	0859.7	0912		2.26
		0903.5			2.17
650 MHz	0858	0900	0910		2.08
		0903			3.85
200 MHz	0859	0859.2	0924		3.82
100 MHz	0858	0859.3	0918		3.97
30 MHz	0857	0859.6	>0900		>3.90
15.4 GHz	<0916	0917	>0920	/15.4	2.77
9.1 GHz	0916	0917.6	0919		2.39
5 GHz	<0917	0917	>0918		1.88
2.7 GHz	<0917	0917	>0918		2.26
1.4 GHz	<0917	0917	>0919		2.15
950 MHz	0916	0918	0921		1.94
610 MHz	<0915	0917	>0920		2.08
410 MHz	<0916	0917	>0920		3.38
200 MHz	0859	0917.1	0924		2.89
100 MHz	0858	0917.3	0918		3.49
DS type II	0923		0925		1
	0933		0936		1
DS type IV	0857		0901		3
	0917		0918		3

1989	September 12	⊙	AR 5676, 5669	To event 251	(120)
H _α	0436	0437	0444	N28 W23	SF EF
	0501	0504	0521	S20 W88	SB ET
	0527	0536	0552	S21 W84	1N FY
1-12 keV	0435	0814	1057		M5.3
52-102 keV	0435:49	0436:29	0437:23		524
	0445:11	0446:12	0448:07		1080
9.1 GHz	0457	1013.1	>1259		1.90
	0458	0459.4	0505		1.98
3.0 GHz	0427	1012	>1227		1.82
	<0457	0500	>0510		2.26
DS type III	0453		0454		2
	0609		0613		2

	0628	1631	2
DS type II	0641	0647	2

1989	September 13	Ø	AR 5687	To event 251	(120)
H α	0329	0336	0413	N17 E10	2N EFHIU
1-12 keV	0330	0340	0440		M3.6
52-275 keV	0330:19	0334:24	0344:01		1.43E+05
15.4 GHz	<0335	0336	>0343		1.96
8.8 GHz	<0333	0336	>0343		2.18
5 GHz	<0333	0334	>0343		2.43
2.7 GHz	<0332	0334	>0341	P2.7	2.65
1.4 GHz	<0333	0334	>0339		2.26
410 MHz	<0331	0331	>0332		2.28
245 MHz	<0329	0331	>0331		1.53
DS type III	0323		0329		2

1989	September 15	⊙	AR 5690	To event 252	(010)
H α	2230	2253	2409	N23 W24	1F EFJIT
1-12 keV	2234	2337	2455		M2.3
52-144 keV	2245:17	2249:19	2251:26		1732
500 MHz	2304	2423	2458		1.68
245 MHz	2235	2500			2.25
DS type II					1
DS type IV					1
DS type V	2324		2324		2
DS type cont.	2245		2300		2

1989	September 29	■	AR 5698	To event 253	(334)
H α	0957	1000	1012	S24 W90	SN A
	<1000	1005	>1005	S32 W90	2N
1-12 keV	1047	1133	1435		X9.8
52-860 keV	1133:13	1133:14	1326:33		1.94E+07
>300 keV	1133		1154		
2.7 GHz	<1120	1126	>1357		3.83
1.4 GHz	<1121	1126	>1338		3.75
950 MHz	1120	1124.1	1138		4.01
		1126.1			3.75
650 MHz	1122	1124.8	1142		3.60
		1126.6			3.58
410 MHz	<1123	1126	>1302		3.95
234 MHz	1121	1126.8	1353		4.56
113 MHz	1125	1127	1348		>3.54
15 GHz	1104	1131	1203		4.15
8.8 GHz	<1120	1137	>1356		4.18
5 GHz	<1119	1145	>1357	[U1.4 P5]	4.26
2.9 GHz	1120	1148.2	1402		3.96
204 MHz	1123	1132.3	1205		4.00
30 MHz	1127	1137.7	>1243		>4.00

15.4 GHz	<1215	1216	>1347		3.08
8.8 GHz	<1215	1216	>1338		3.20
5 GHz	<1215	1216	>1347		3.36
2.7 GHz	<1215	1216	>1347	P2.7	3.45
1.4 GHz	<1215	1216	>1347		2.93
610 MHz	<1217	1220	>1302		3.23
410 MHz	<1215	1217	>1301		3.11
245 MHz	<1215	1218	>1243		2.78
DS type II	1125		1157		3
DS type III	1124		1128		3
	1200		1200		2
	1217		1217		1
DS type IV	1125		1217		2

1989	October 19	●	AR 5747		To event 254	(443)
H _α	1229	1239	2149	S25 E09	3B	EFIJKUYZ
1-12 keV	1232	1258	2102		X13.0	
52-461 keV	1255:18	1258:43	1756:36		1.42E+08	
>300 keV	1256		1353			
15.4 GHz	<1239	1256	>1521	U1.4-2.8/15.4	4.78	
8.8 GHz	<1243	1257	>1526		4.64	
5 GHz	<1243	1258	>1526		4.53	
2.9 GHz	1239	1248.8	1319		3.81	
		1251			3.83	
		1256			4.04	
1.4 GHz	<1243	1258	>1518		3.96	
610 MHz	<1243	1259	>1419		4.66	
410 MHz	<1244	1252	>1427		4.26	
245 MHz	<1244	1249	>1429		4.11	
30 MHz	1248	1254.8			3.90	
410 MHz	<1447	1449	>1453		4.23	
		1450			4.15	
DS type II	1249		1253		3	
DS type III	1247		1257		3	
DS type IV	1246		1311		3	
DS type V	1246		1249		2	

1989	October 22	●	AR 5747		To event 255	(334)
H _α	1708	1719	2109	S27 W32	1N	FKTY
1-12 keV	1738	1805	2055		X2.9	
52-114 keV	1723:27	1725:20	1731:14		16714	
15.4 GHz	<1732	1802	>1957		4.40	
8.8 GHz	<1730	1802	>1956		4.59	
5 GHz	<1732	1803	>2004	U0.6 P5	4.68	
2.7 GHz	<1733	1818	>2004		4.34	
1.4 GHz	<1732	1824	>2004		3.81	
610 MHz	<1731	1746	>1915		3.20	
410 MHz	<1735	1751	>1852		3.40	

245 MHz	<1734	1738	>1911	3.08
DS type II	1745		1759	3
DS type III	1742		1743	1
DS type IV	1744		1842	3

1989	October 24	●	AR 5747		To event 256	(334)
H _α	1738	1748	2349	S29 W57	2N	FHKTUYZ
1-12 keV	1736	1831	0224		X5.7	
52-461 keV	1759:51	1810:24	1949:54		6.95E+07	
>300 keV	1757		1812			
15.4 GHz	<1737	1810	>2025		4.45	
8.8 GHz	<1737	1810	>2026	U0.6 P8.8	4.69	
5 GHz	<1735	1811	>2024		4.67	
2.7 GHz	<1738	1813	>2024		4.04	
1.4 GHz	<1737	1850	>2034		3.48	
610 MHz	<1746	1810	>1854		3.20	
410 MHz	<1750	1814	>1849		3.48	
245 MHz	<1751	1838	>1911		2.88	
DS type II	1800		1801		1	
	1806		1810		3	
	1836		1840		3	
DS type III	1838		1839		2	
DS type IV	1801		1816		3	
DS type V	1740		1744		2	
	1802		1810		3	
	1832		1840		3	
DS type cont.	1816		2030		1	

1989	October 29	■	AR 5747		To event 257	(110)
1-12 keV	0221		0451	0617		M4.0
15.4 GHz	<0359		0408	>0442		2.86
8.8 GHz	<0357		0406	>0442	P9	3.04
2.8 GHz	0251		0306.4	0309		1.69
	0346		0350.5	>0449		2.00
			0408.3			2.95
500 MHz	0249		0253.3	0309		1.38
	0346		0431	0527		2.93
100 MHz	0349		0354.5	0435		3.26
DS type II	0306			0313		2
DS type III	0313			0316		2
DS type IV	0316			0432		3

1989	November 8	∅	AR 5782		To event 258	(010)
H _α	1818	1826	1941	N14 E12	1N	EFK
1-12 keV	1824	1848	1857		M2.0	
52-461 keV	1817:28	1900:16	1907:14		6.00E+05	
15 GHz	<1859	1902	>1946		2.48	
8.8 GHz	<1858	1908	>1927		3.08	

5 GHz	<1857	1903	>1928	2.89
2.8 GHz	1817	1826.1	2205	1.52
		1910		2.90
1.4 GHz	<1857	1909	>1914	2.26
DS type II	1824		1831	1

1989	November 8	☉	AR 5782	To event 258		(010)
H _α	1856	1902	2034	N20 W55	2B	FKU
1-12 keV	1858	1912	1931		M19.8	
52-461 keV	1817:28	1900:16	1907:14		6.00E+05	
15.4 GHz	<1859	1902	>1944		2.48	
8.8 GHz	<1859	1902	>1920		2.68	
	<1858	1908	>1827		3.08	
5 GHz	<1856	1903	>1819	[P5-8.8]	2.89	
2.7 GHz	<1856	1909	>1828		2.78	
1.4 GHz	<1857	1909	>1814		2.26	
610 MHz	<1901	1903	>1913		2.54	
410 MHz	<1901	1904	>1916		2.68	
245 MHz	<1857	1903	>1916		2.26	
DS type III	2024		2027		1	

1989	November 15	●	AR 5786	To event 259		(113)
H _α	0638	0656-	0815	N11 W28	2B	EFKU
1-12 keV	0652	0659	0821		X3.2	
52-461 keV	0657:06	0658:01	0750:37		5.13E+06	
15.4 GHz	<0654	0656	>0720	U1.4/15.4	3.70	
9.1 GHz	0654	0659.9	0705		3.58	
5 GHz	<0653	0655	0706		3.26	
2.7 GHz	<0654	0655	>0704		3.30	
1.4 GHz	<0654	0655	>0705		3.11	
950 MHz	0654	0656.7	0719		3.33	
610 MHz	<0655	0656	>0715		3.65	
245 MHz	<0655	0656	>0744		4.67	
100 MHz	0655	0656.5	>0707		5.17	
40 MHz	0656	0659	0707		3.73	
DS type II	0657		0658		3	
DS type III	0655		0658		3	
DS type IV	0658		0940		3	
DS type V	0656		0657		3	

1989	November 20	☉	AR 5793	To event 260		(000)
H _α	0033	0037	0101	S27 W33	SN	EF
1-12 keV	<0035	0038	>0101		M2.1	
15.4 GHz	<0034	0036	>0042	U2.7/15.4	2.73	
8.8 GHz	<0035	0036	>0042		2.54	
5 GHz	<0035	0036			2.40	
2.7 GHz	<0034	0036	>0042		2.11	
1.4 GHz	<0034	0035	>0042		2.32	

610 MHz	<0035	0036	>0042	2.11
410 MHz	<0034	0035	>0039	3.08
245 MHz	<0035	0036	>0037	3.23
DS type II	0040		0041	1
DS type III	0031		0038	3
	0042		0045	3

1989	November 26	O	AR 5800	To event 261 (120)		
H _α	1749	1815	2122	N25 W03	2B	EFKTU ¹
1-12 keV	1759	1941	2149		M4.0	
15.4 GHz	<1905	1907	>1910	W5.4	1.85	
8.8 GHz	<1906	1906	>1909		1.90	
5 GHz	<1853	1907	>1943		2.26	
2.7 GHz	<1847	1907	>2116		2.63	
1.4 GHz	<1853	2044	>2120		3.08	
610 MHz	<1853	1907	>2121		3.11	
410 MHz	<1852	1907	>2119		3.56	
245 MHz	<1853	1956	>2125		2.92	
DS type IV	1901		2030		2	
DS type V	1853		1901		2	

1989	November 27	O	AR 5799	To event 261 (120)		
H _α	1702	1706	1821	N21 W63	1N	FK
1-12 keV	1702	1739	1812		M1.1	
2.8 GHz	1703	1704.6	1708		1.40	
410 MHz	<1749	1749	>1751		2.54	

1989	November 30	●	AR 5800	To event 262 (330)		
H _α	1145	1225	1616	N25 W52	2N	FUY
1-12 keV	1154	1229	1302		X2.6	
15.4 GHz	<1159	1212	>1324		3.57	
8.8 GHz	<1159	1212	>1324		3.64	
5.9 GHz	1153	1212.3	1233	[U0.8 P5.9]	3.69	
2.9 GHz	1154	1213.7	1240		3.55	
		1223.8			3.64	
1.5 GHz	1155	1225	>1415		3.09	
808 MHz	1156	1205.3	1336		2.28	
410 MHz	<1201	1209	>1238		2.62	
245 MHz	<1209	1209			2.88	
DS type III	1203		1210		2	

1990	February 3	●	AR 5917	To event 263 ((1)10)		
H _α	0108	0109	0123	S12 W79	1N	DE
1-12 keV	0107	0112	0123		M6.9	
35 GHz	0108	0109.1	0111	[U5] P15.4-35	3.11	
15.4 GHz	<0108	0109	>0111		3.20	
8.8 GHz	<0108	0109	>0110		2.83	
5 GHz	<0108	0108	>0119		2.78	

2.7 GHz	<0108	0108	>0122	[U0.5 P2.7]	2.89
1.4 GHz	<0108	0108	>0113		2.71
500 MHz	0108	0109	0121		2.61
245 MHz	<0059	0107	>0122		2.97
100 MHz	0107	0107.9	0116		3.65
DS type III	0107		0110		3
	0110		0115		1
DS type IV	0107		0222		3
DS type V	0107		0110		3

1990	March 19	●	AR 5969	To event 264		(230)
H _α	0438	0442	0643	N33 W39	1N	DEFKU
1-12 keV	0438	0508	0801		X1.5	
35 GHz	0438	0444.7	0509		2.47	
15.4 GHz	<0400	0444	>0552		3	
8.8 GHz	<0439	0444	>0550		3.28	
5 GHz	<0437	0444	>0602	U0.95 P5	3.32	
2.7 GHz	<0436	0453	>0556		3.15	
1.4 GHz	<0435	0459	>0603		2.85	
950 MHz	0440	0445.70	0511		2.06	
		0453			2.01	
		0459.8			2.04	
650 MHz	0438	0446.3	0511		2.60	
		0452.9			2.40	
		0454.6			2.37	
245 MHz	<0443	0449	>0514		3.43	
100 MHz	0443	0446.7	0501		3.99	
9.1 GHz	<0433	0537.8	>0712		2.08	
5.9 GHz	0528	0537.6	0552	U0.95 P5.9	2.10	
3 GHz	0542	0542	1124		2.00	
950 MHz	0527	0537.5	0548		1.93	
650 MHz	0525	0539.5	0548		1.98	
410 MHz	<0525	0540	>0547		2.15	
DS type II	0046		0512		2	
DS type IV	0442		0600		2	

1990	March 19		AR 5969	To event 264		(230)
H _α	0334	0335	0423	N31 W40		SF
1-12 keV	0332	0338	0423			M1.3
5 GHz	<0334	0334	>0335			1.85
2.8 GHz	0331	0334.5	0336			2.06

1990	March 28	○	AR 5988	To event 265		(010)
H _α	0727	0733	0948	S05 W35	2N	EFJKUWZ
1-12 keV	0730	0750	0809		M4.2	
35 GHz	0734	0741.4	0804		2.14	
15.4 GHz	<0734	0741	>0818		2.41	

8.8 GHz	<0734	0740	>0819	[U3P5-8.8]	2.71
5 GHz	<0730	0740	>0818		2.73
3 GHz	0730	0740.5	0756		2.42
1.4 GHz	<0733	0741	>0802		2.59
500 MHz	0736	0741.2	0824		2.54
		0750			2.93
245 MHz	<0743	0759	>0811		2.32
100 MHz	0739	0739.7	0751		2.54
		0750.4			2.62
DS type III	0739		0740		2
	0741		0752		2
	0748		0749		3
DS type IV	0757		0801		1
DS type V	0739		0749		2
DS type cont.	0750		1051		2

1990	March 29	○	AR 5983	To event 265	(010)
H _α	0827	0830	0845	S32 W60 SF	EFIJKU'WZ
1-12 keV	0730	0750	0809		C3.8
9.3 GHz	0827	0830.3	0858		1.04
5.9 GHz	0826	0830.1	0858		1.04
3 GHz	0826	0827.5	0959		1.28
1.5 GHz	0826	0830	0835		0.85
950 MHz	0839	0839.8	0841		0.48
DS type III	0817		0821		2

1990	April 6	○	AR 6007	To event 266	(010)
H _α	0618	0620	0625	N25 E50	1N DFK
1-12 keV	0610	0628	0820		C3.2
9.1 GHz	0613	0626.5	0655		0.85
3 GHz	0455	0618.3			1.20
950 MHz	0613	0618.3	0632		0.70
500 MHz	0617	0618	0620		1.86
DS type III	0620		0621		2

1990	April 7	○	AR 6012	To event 266	(010)
H _α	1511	1524	1618	N31 E62	SF FH
1-12 keV	<1511	1532	>1620		C9.5
15.4 GHz	<1521	1523	>1538		2.08
8.8 GHz	<1521	1523	>1539		2.30
5 GHz	<1521	1523	>1538	[U1.4] P5	2.49
2.8 GHz	1505	1523.3	1543		2.42
1.4 GHz	<1521	1524	>1533		1.83
808 MHz	1521	1530	1541	[P0.8]	2.56
610 MHz	<1521	1527	>1535		2.18
245 MHz	<1517	1522			1.54
DS type II	1522		1535		2
DS type III	1521		1523		2

DS type V	1521	1522	2
DS type cont.	1525	1547	1

1990	April 8	O	AR 6007	To event 266	(010)
H _α	0344	0402	0513	N24 E28	2N EFKU
1-12 keV	0347	0416	0457		M1.5
5 GHz	<0353	0355	>0406		1.80
2.7 GHz	<0352	0400	>0404	U0.5 P2.7	2.04
1.4 GHz	<0352	0403	>0405		1.71
950 MHz	<0357	0403.2	>0502		1.36
	0416	0418.4	0425		1.11
500 MHz	0347	0358.5			1.20
		0418.3			1.32
200 MHz	0348	0352.8	0423		2.20
100 MHz	0347	0353.7	0434.4		2.81
DS type III	0351		0358		2
DS type cont.	0346		0557		2

1990	April 10	O	AR 6007	To event 267	(0000)
H _α	1144	1150	1316	N24 W04	1N
1-12 keV	1146	1216	1242		M1.1
8.8 GHz	<1155	1155			1.34
5 GHz	<1153	1153	>1154		1.32
2.9 GHz	1145	1150.10		U0.6 P1.5-2.9	1.75
1.5 GHz	1145	1151	1200		1.67
808 MHz	1146	1159.8	1208		1.30
600 MHz	1146	1154	1217		0.95
204 MHz	1147	1152	1200		2.20
100 MHz	1147	1148.5	>1201		2.74
		1151.3			2.54
30 MHz	1146	1148.4	>1232		>3.65
DS type III	1147		1159		3
	1204		1210		1
	1210		1210		1
DS type IV	1148		1239		2
DS type cont.	1221		1355		1

1990	April 15	●	AR 6022	To event 268	(110)
H _α	0230	0257	0503	N32 E54	2B FIUZY
1-12 keV	0228	0302	0607		X1.4
80 GHz	0231	0259.3	>0501		3.54
35 GHz	0231	0259.3	>0501		4.27
15.4 GHz	<0231	0259	>0641	P15.4	4.53
8.8 GHz	<0230	0300	>0431		4.36
5 GHz	<0229	0305	>0658		4.20
2.7 GHz	<0230	0337	>0724		4.08
500 MHz	0226	0304.5			3.95
245 MHz	<0236	0256	>0724		3.40

100 MHz	0237	0253.5	0426	2.99
15.4 GHz	<0430	0447	>0617	2.36
8.8 GHz	<0430	0439	>0627	2.73
5 GHz	<0430	0431	>0625	3.04
2.7 GHz	<0430	0431	>0623	3.23
1.4 GHz	<0430	0437	>0622	4.89
950 MHz	<0332	0440.5		5.38
650 MHz	0331	0446	[P0.6\15.4]	5.79
410 MHz	<0430	0447	>0846	4.58
245 MHz	<0430	0455	>0555	2.62
DS type III	0239		0239	2
DS type IV	0245		0458	3

1990	April 16	☉	AR 6021	To event 268	(110)
H _α	0630	0632	0736	S12 E46	2B BFI
1-12 keV	0627	0634	0733		X2.2
15.4 GHz	<0629	0631	>0649	U0.6/15.4	3.20
8.8 GHz	<0629	0631	>0652		3.11
5 GHz	<0628	0631	>0653		3.11
2.7 GHz	<0628	0631	>0649		3.08
1.4 GHz	<0629	0631	>0649		2.61
950 MHz	0628	0632.3	0645		2.34
610 MHz	<0629	0630	>0642		2.04
410 MHz	<0630	0630	>0631		2.51
200 MHz	0631	0633.7	0631		2.91
100 MHz	0632	0636.2	0640		3.83
40 MHz	0637	0639.2	0642		>3.30
DS type II	0633		0645		3
	0705		0711		2
DS type III	0718		0719		1

1990	April 28	☉	AR 6038	To event 269	(120)
H _α	0023	0024	0038	N18 W38	SF
5 GHz	<0019	0019			1.38
2.8 GHz	0014	0018.8	0030	P2.8	1.84
1.4 GHz	<0019	0019	>0020		1.36
500 MHz	0017	0020.1	0024		0.90
100 MHz	0017	0023.1	0034		>3.00
DS type II	0024		0050		2
DS type III	0024		0027		1

1990	May 21	●	AR 6063	To event 271	(223)
H _α	2212	2217	2405	N34 W37	2B FKUZ
1-12 keV	2210	2219	2247		X5.5
80 GHz	2212	2214.7	2225		3.94
35 GHz	2212	2214.7	2228	U0.5 P35	4.54
15.4 GHz	<2212	2214	>2226		4.00
8.8 GHz	<2212	2214	>2229		3.81

5 GHz	<2212	2214	>2227	3.57
2.8 GHz	2212	2214.8	2310	3.48
1.4 GHz	<2212	2216	>2229	3.48
610 MHz	<2212	2218	>2233	3.38
500 MHz	2212	2213	>2236	3.49
410 MHz	<2212	2213	>2235	3.73
200 MHz	2212	2213.9	2223	4.54
100 MHz	2212		2226	>4.20
2.7 GHz	2251	2253.6	2301	1.69
610 MHz	<2252	2253	>2256	3.04
500 MHz	2251	2252.6	2257	3.05
410 MHz	<2251	2253	>2254	2.80
245 MHz	<2251	2252	>2254	3.15
DS type III/V	2213		2238	3
DS type IV	2212		2243	3
DS type cont.	2240		2340	1

1990	May 22	Ø	AR 6064	To event 271	(223)
H _α	0004	0016	0201	S15 W43	IN EFHKU
1-12 keV	<0007	0055	>0219		M3.2
8.8 GHz	<0012	0013	>0025		1.74
5 GHz	<0012	0013	>0025		1.49
610 MHz	<0014	0014			1.11
	<0121	0125	>0125		2.04
410 MHz	<0120	0123	>0126		1.65
245 MHz	<0120	0124	>0127		2.11
DS type III	0022		0024		1
	0124		0124		1

1990	May 24	●	AR 6063	To event 272	(223)
H _α	2046	2049	2145	N36 W76	1B FY
1-12 keV	2044	2051	2130		X9.3
15.4 GHz	<2045	2048	>2113		4.62
8.8 GHz	<02045	2048	>2106	U2.8 P8.8	4.65
5 GHz	<02046	02048	>2103		4.34
2.7 GHz	<2046	2048	>2113		4.11
1.4 GHz	<2047	2048	>2113	[P1.4]	4.32
610 MHz	<2047	2050	>2113		3.84
410 MHz	<2048	2048	>2112		4.18
245 MHz	<2048	2048	>2109		4.97
100 MHz	2047		2133		>4.20
DS type II	2100		2107		2
DS type IV	2048		2120		3
DS type cont.	2110		2343		1

1990	May 26	■	AR 6063	To event 273	(223)
1-12 keV	2045	2058	2133		X1.4
15.4 GHz	<2048	2049	>2054	/15.4	3.34

8.8 GHz	<2048	2049	>2058	3.08
5 GHz	<2048	2049	>2059	3.08
2.7 GHz	<2048	2050	>2102	3.11
1.4 GHz	<2048	2050	>2107	3.11
610 MHz	<2048	2054	>2105	2.92
410 MHz	<2048	2051	>2400	3
245 MHz	<2046	2051	>2102	4.20
100 MHz	<2047	2047.8	>2121	>4.20
DS type III	2048		2048	2
	2054		2054	1
DS type IV	2048		2114	3
DS type cont.	1830		2345	1

1990 May 28	●	AR 6063	To event 274		(212)
1-12 keV	0428	0433	0438		C1.4
	0515	0521	0530		C9.7
80 GHz	0428	0430.7	0433		1.30
35 GHz	0428	0430.7	0439		2
17 GHz	0428	0430.7	0439		2.16
9.3 GHz	0428	0430.7	0456		2.59
5.9 GHz	0428	0430.7	0457		2.92
2.7 GHz	<0428	0430	>0450		3.20
1.4 GHz	<0428	0430	>0443	P1.4	3.45
610 MHz	<0429	0432	>0443		3.36
410 MHz	<0428	0430	>0450		3.41
245 MHz	<0428	0430	>0450		4.32
100 MHz	0428	0429.5	0444		3.62
15 GHz	0518	0519.7	0534		1.30
		0524.2			1.40
9.3 GHz	0516	0519.6	0533		1.36
		0524.4			1.51
5.9 GHz	0516	0519.5	0532		1.23
		0524			1.34
DS type II	0430		0452		3
DS type III	0428		0437		3
DS type IV	0428		0457		3
DS type V	0428		0430		3

1990 June 12	●	AR 6089	To event 275		(1X0)
H _α	0429	0434	0613	N10 W32	2B EFKu
1-12 keV	<0431	0434	>0455		C6.2
	0520	0541	0716		M6.4
35 GHz	0525	0529	0557		1.74
15.4 GHz	<0522	0529	>0538		2.23
8.8 GHz	<0521	0529	>0616		2.56
5 GHz	<0519	0529	>0522		2.84
2.8 GHz	0516	0530.3	>0603	U0.95 P2.8	2.94
1.4 GHz	<0519	0529	>0548		2.51
950 MHz	0517	0531.4	0552		2.41

610 MHz	<0519	0531	>0551	3.36
410 MHz	<0518	0536	>0550	3.08
245 MHz	<0521	0529	>0616	2.56
100 MHz	0516	0525.3	0536	3.37
		0531.2		3.06
17 GHz	0432	0433.6	0435	2.04
8.8 GHz	<0432	0433	>0436	2.60
5 GHz	<0432	0433	>0436	2.36
2.7 GHz	<0433	0433	>0434	1.67
1.4 GHz	<0433	0433		1.15
950 MHz	0432	0433.5	0440	1.34
610 MHz	<0433	0433		2.64
410 MHz	<0432	0433	>0445	2.18
245 MHz	<0432	0432	>0436	2.58
DS type III	0432		0437	3
	0518		0541	3
DS type IV	0518		0928	2
	0613		>0613	1
DS type cont	0544		1100	2

U1.4 P5

1990	July 25	●	AR 6174	To event 276	(1X0)
H _α	2221	2232	2530	S14 E56	2N EFJKTUZ
1-12 keV	2200	2335	26d0151		M2.3
15.4 GHz	<2320	2333	>2408		2.11
8.8 GHz	<2325	2337	>2408		2
5 GHz	<2300	2301	>2301		1.56
	<2325	2326	>2408		2.23
2.7 GHz	<2258	2300	>2304		1.79
	<2320	2332	>2408		2.43
1.4 GHz	<2300	2301	>2304		1.72
	<2310	2335	>2359		3.59
610 MHz	<2319	2331	>2358		1.88
410 MHz	<2313	2313			1.79
	<2325	2325			1.26
245 MHz	<2240	2241	>2241		2.20
	<2331	2333	>2333		2.23
	<2342	2353	>2354		2.56
DS type III	2311		2311		1
	2318		2324		3
DS type IV	2326		2333		1
DS type V	2232		2236		2
DS unclassified	2312		2313		1
	2315		2316		1

1990	July 30	●	AR 6180	To event 277	(2X0)
H _α	0632	0638	0815	N18 E42	2N DEFHIJKU
1-12 keV	0631	0736	0043		M4.4
35 GHz	0710	0733.6	0752		2.34

15.4 GHz	<0711	0735	>0839		2.63
9.1 GHz	0703	0735			2.95
5 GHz	<0707	0735	>0849		3.18
2.7 GHz	<0702	0728	>0845	P2.7	3.49
1.4 GHz	<0702	0757	>0834		3.41
950 MHz	0702	0759.6	0836		3.98
610 MHz	<0711	0802	>0832		3.38
410 MHz	<0709	0722	>0828		2.49
245 MHz	<0714	0723	>0828		2.41
100 MHz	0716	0717.8	0757		2.99
		0735			2.08
30 MHz	0718	0719.3	0831		3.30
DS type II	0715		0718		3
	0724		0726		1
DS type III	0718		0721		3
	0732		0813		2
DS type IV	0716		0833		3
DS type cont.	0714		0810		1

1990	August 10	☉	AR 6203	To event 278	(OX0)
H _α	1743	1814	02005	N19 E73	2B FHKUY
1-12 keV	1806	1820	1836		M7.9
15.4 GHz	<1810	1817	>1847		3.56
8.8 GHz	<1809	1817	>1847	U0.6 P8.8	3.72
2.7 GHz	<1808	1825	>1847		3.18
610 MHz	<1810	1815	>1847		2.23
410 MHz	<1809	1814	>1828		3.26
245 MHz	<1810	1818	>1828		2.73
410 MHz	<1843	1852	>1926		2.71
245 MHz	<1842	1857	>1918		2.20
DS type II	1816		1820		3
DS type III	1807		1815		2
DS type IV	1806		1912		3

1990	August 13	☉	AR 6199	To event 278	(OX0)
H _α	0921	0927	0953	N14 E18	1F
1-12 keV	0919	0925	0935		M1.0
15.4 GHz	<0922	0923	>0924		2
9.1 GHz	0921	0923	0924		2.30
5.9 GHz	0920	0923.1	0927	P5.9	>2.90
1.5 GHz	0922	0923	0955		1.65
DS type III	0946		0946		2

1990	August 13	☉	AR 6197	To event 278	(OX0)
H _α	1312	1321	1532	N15 E09	1N DFHK
1-12 keV	1312	1337	1416		M1.4
15.4 GHz	<1322	1322	>1323	U5/15.4	1.73
5 GHz	<1320	1321	>1321		1.36

2.8 GHz	1309	1325.8	1335	1.79
1.5 GHz	1310	1325.5	1410	1.88
808 MHz	1314	1325.9	1337	1.04
610 MHz	<1311	1322	>1326	1.89
410 MHz	<1319	1325	>1326	1.94
	<1329	1331	>1332	2
245 MHz	<1321	1321		1.41
	<1328	1329	>1332	2.62
DS type III	0946		0946	2

1990	October 23	○	AR 6327A	To event 279	(OX0)
H _α	0804	0806	0811	S37 E11	SN EG
9.3 GHz	0804	0806	0808	49.3	1
5 GHz	<0805	0805	>0806		1.32
2.9 GHz	0803	0805.8	0809		1.73
1.4 GHz	<0805	0805	0807		1.74
950 MHz	0803	0805.9	0812		1.81
610 MHz	<0804	0805	>0808		1.91
410 MHz	<0805	0805	>0807		2.00
245 MHz	<0805	0807	>0809		2.56
113 MHz	0809	0810	0815		3.32
40 MHz	0808	0810.7	0823		3.18
DS type II	0809		0819		2
DS type IV	0812		0830		2

1990	October 23	○	AR 6331A, 6337, 6327	To event 279	(OX0)
H _α	0829	0832	0842	N19 E27	SN EFI
	0832	0850	0858	S13 E64	SN E
	0852	0857	0915	N18 E10	SF EF
1-12 keV	<0840	0853	0918		C1.8
5.9 GHz	0828	0828.6	0831		0.48
245 MHz	<0825	0825	>0826		2.11
	<0829	0831	>0831		1.89
	<0840	0840			1.73
DS type III	0828		0829		1

1990	November 10	○	AR 6361	To event 280	(OX0)
H _α	1154	1200	1243	N06 E17	2B F
1-12 keV	<1154	1200	>1239		C6.4
9.5 GHz	1156	1201	1225		1.23
5 GHz	<1158	1158	>1159		1.63
2.7 GHz	<1158	1159	>1200		2.18
1.4 GHz	<1158	1159	>1200		1.78
810 MHz	1158	1159.5	1203		1.43
410 MHz	<1157	1158	>1159		2.11
245 MHz	<1159	1159			2.38
DS type III	1157		1158		1
	1159		1159		2

1990	November 11	○	AR 6359B	To event 280	(OX0)	
H _α	0551	0555	0601	N05 E07	SN	D
1-12 keV	0420	0435	0516		M2.1	
2.7 GHz	<0423	0423	>0424		1.32	
1.4 GHz	<0422	0423	>0424		1.34	
245 MHz	<0422	0422	>0423		1.91	
100 MHz	0422	0424	0435		>3.00	
DS type V	0423		0433		2	
DS type cont.	0433		0530		1	

1990	December 23	●	AR 6412	To event 281	(OX0)	
H _α	0943	1001	1028	N12 W70	2B	U
1-12 keV	0933	0952	1013		X1.0	
15 GHz	0938	0944.8	1006		3.21	
9.3 GHz	0928	0944.9	1006	U1.4 P9.3	3.27	
5.9 GHz	0928	0944.9	1006		3.07	
3 GHz	0941	0944.9	0954		2.40	
1.4 GHz	<0943	0946	>240		2.15	
950 MHz	0942	0945.9	0951		2.30	
600 MHz	0943	0946.2	0952.7		2.04	
410 MHz	<0942	0942	>0949		2.67	
200 MHz	0942	0943.9	0951		2.52	
100 MHz	0943	0944.6	1002		2.74	
15 GHz	0938	0947.1	1006		2.97	
9.3 GHz	0928	0947	1006	P9.3	3.14	
5.9 GHz	0928	0947.7	1006		3.07	
2.9 GHz	0942	0947.9	0954		2.48	
204 MHz	0942	0947	0956		5.00	
100 MHz	0943	0954.8	1002		3.38	
		0957.6			3.41	
40 MHz	0944	0958.3	1001		3.65	
DS type II	0943		0949		3	
	0953		1006		2	
DS type III	0926		0928		1	
DS type IV	0942		0948		3	

1990	December 24	●	AR 6412	To event 282	(OX0)	
H _α	1533	1537	1606	N10 W80	1B	K
1-12 keV	1530	1541	1600		X1.8	
15.4 GHz	<1534	1535	>1549	U0.6/15.4	3.54	
8.8 GHz	<1533	1537	>1543		3.32	
5 GHz	<1533	1537	>1543		2.82	
2.7 GHz	<1534	1536	>1541		2.49	
1.4 GHz	<1534	1536	>1541		2.28	
610 MHz	<1534	1536	>1541		2.04	
410 MHz	<1534	1535	>1540		2.08	
245 MHz	<1536	1539	>1542		3.41	
DS type V	1540		1545		1	

1990	December 24	Ø	AR 6420	To event 282	(0X0)	
H _α	<1322	1327	>1330	S24 E47	1F	F
1-12 keV	1319	1326	1410		M2.2	
9.5 GHz	1320	1323	1332		1.46	
5 GHz	<1322	1323	>1325	[P5]	1.81	
2.7 GHz	<1322	1323	>1323		1.54	
600 MHz	1321	1322	1323		0.85	

1991	January 25	●	AR 6471, 6475, 6458	To event 283	(0X0)	
H _α	0623	0641	0658	S12 E90	1B	DH
	0630	0630	0638	S16 E78	SF	
	0627	0628	0630	N21 W43	SF	
1-12 keV	0623	0635	0951		X10.7	
15.4 GHz	<0628	0630	>0753	P0.2 U1.4/15	3.82	
9.1 GHz	0624	0631	0639		3.80	
5 GHz	<0628	0631	>0753		3.64	
2.7 GHz	<0629	0631	>0753		3.54	
1.4 GHz	<0629	0632	>0747		3.46	
950 MHz	0630	0632.4	0649		3.55	
500 MHz	0631	0632.7	0708		4.63	
410 MHz	<0631	0631	>0645		4.45	
245 MHz	<0631	0632	>0707		4.76	
100 MHz	0631	0636.6	0735		4.41	
DS type III	0631		0637		3	
DS type II	0637		0659		3	
DS type IV	0644		0749		3	

1991	January 27	Ø	AR 6471	To event 283	(0X0)	
H _α	1440	1444	1742	S13 E59	1B	FY
1-12 keV	1439	1550	1604		X1.9	
50 GHz	1440	1441.4	1447		1.92	
35 GHz	1439	1441.3	1453		2.23	
15.4 GHz	<1440	1441	>1456	P15.4	3.67	
8.8 GHz	<1439	1441	>1456		3.46	
5 GHz	<1439	1441	>1459		2.84	
2.8 GHz	1440	1442	1451		1.77	

1991	January 31	●	AR 6462, (6476, 6469)	To event 284	(2X0)	
H _α	0153	0158	0248	N21 E46	1B	EF
	0157	0200	0448	S17 W35	2B	EFK
	0153	0211	0447	S18 W51	1B	FK
	0207		>0310	S11 W27	2N	
1-12 keV	0153	0230	0335		X1.3	
15.4 GHz	<0155	0204	>0420		2.30	
8.8 GHz	<0156	0204	>0403		2.53	
5 GHz	<0155	0204	>0403		2.82	
2.7 GHz	<0153	0204	>0420	P0.5 U1.4 P2.7	2.87	
1.4 GHz	<0155	0204	>0420		2.45	

500 MHz	0156	0204	0438	2.97
410 MHz	<0158	0205	>0420	2.72
245 MHz	<0153	0208	>0334	2.63
100 MHz	0156	0208.6	0342	>3.00
DS type III	0201		0207	3
DS type V	0201		0208	2
DS type II	0207		0227	2
DS type IV	0207		0413	2

1991	February 8	☉	AR-6487	To event 285	(0X0)
H _α	0524	0554	0720	N14 E34	1F EFK
1-12 keV	0629	0748	0911		M4.7
15 GHz	0642	0643	0918		1.76
9.3 GHz	0617	0643	1011		2.43
5.9 GHz	0625	0643	1039		2.56
2.95 GHz	0638	0743	>1230		2.3
950 MHz	0615	0736	>0759		1.26
100 MHz	0540	0732	>0745		1.9
DS type III	0507		0516		2
DS type cont.	0645		0844		2

1991	February 25	●	AR 6497	To event 286	(0X0)
H _α	0809	0821	0942	S15 W82	2N HY
1-12 keV	0806	0819	0951		X1.2
50 GHz	0811	0814	0842		1.80
35 GHz	0811	0814	0844		1.88
19.6 GHz	0810	0813.3	0846		1.99
15 GHz	0807	0813.8	0830		3.19
9.1 GHz	0806	0813.6	0848	[P0.2 U0.65] P9	3.30
5 GHz	<0809	0813	>0851		3.11
3 GHz	0806	0813.5	1020		3.07
1.4 GHz	<0810	0813	>0853		3.04
950 MHz	0810	0814.2	0840		2.75
650 MHz	0810	0815.2	0840		2.40
204 MHz	0813	0815	0836		4.93
127 MHz	0814	0815	0816		>3.48
9.3 GHz	0806	0819.7	0830		>3.19
5.9 GHz	0806	0819.3			3.24
2.8 GHz	0810	0819.2	0854	P2.8	3.33
650 MHz	0810	0820.8			2.53
410 MHz	<0814	0819	>0823		2.11
DS type IV	0812		0912		3
DS type III	0812		0844		3
DS type II	0815		0815		3
DS type II	0831		0847		3

1991	March 12	●	AR 6545	To event 287	(0X0)	
H _α	1228		1250	1320	S08 E58	1N F
1-12 keV	1240		1246	1258		X1.7
35 GHz	1241		1243.5	1258	/35	4.13
15.4 GHz	<1242		1243	>1253		3.74
8.8 GHz	<1241		1243	>1254		3.53
5 GHz	<1242		1243	>1253		3.46
2.7 GHz	<1242		1243	>1254		3.30
1.4 GHz	<1242		1243	>1252		3.15
610 MHz	<1242		1244	>1254		3.04
410 MHz	<1242		1243	>1254		2.85
245 MHz	<1241		1246	>1251		4.76
DS type III	1223			1231		3
DS type IIIRS	1238			1257		3
DS type II/IV	1238			1257		3
DS type V	1242			1248		3
DS type cont.	1302			1619		1

1991	March 22	●	AR 6555	To event 288	(4X0)	
H _α	2243		2245	2317	S26 E28	1N HM
1-12 keV	2242		2247	2310		X9.4
15.4 GHz	<2243		2244	>2246		4.11
8.8 GHz	<2243		2244	>2247	P2.7-8.8	4.57
5 GHz	<2243		2244	>2348		4.49
2.7 GHz	<2243		2244	>2348		4.56
1.4 GHz	<2243		2244	>2348		4.26
610 MHz	<2243		2245	>2257		4.00
410 MHz	<2243		2244	>2348		4.00
245 MHz	<2243		2243	>2348		
DS type II	2247			2255		2

1991	March 23	Ø	AR 6555	To event 288	(4X0)	
H _α	0219		0311	0555	S21 E13	2B EFIJK
1-12 keV	0245		0429	0606		M6.8
8.8 GHz	<0229		0229			2.38
1.4 GHz	<0242		0243	>0427		2.90
610 MHz	<0219		0220	>0221		1.64
410 MHz	<0232		0232	>2400		2.66
245 MHz	<0228		0242	>0426		3.18
15.4 GHz	<0313		0313			1.64
8.8 GHz	<0251		0252	>0252		1.28
5 GHz	<0249		0256	>0318		2.11
2.7 GHz	<0245		0302	>0426		2.36
15.4 GHz	<0333		0335	>0335		1.38
610 MHz	<0228		0345	>0426		3.99
410 MHz	<0228		0349	>0426		3.88
DS type III	0435			0435		2
	0511			0513		3

1991	April 2	●	AR 6562	To event 289	(1X0)
H _α	2251	2303	3d0206	N15 E02 2N	EFHJKTU
1-12 keV	2255	2327	2503		M6.1
15.4 GHz	<2318	2320	>2320	0.2\15	1.38
8.8 GHz	<2317	2318	>2318		1.32
5 GHz	<2302	2318	>2339		2.18
2.7 GHz	<2302	2318	>2339		2.23
1.4 GHz	<2257	2318	>2342		2.20
610 MHz	<2251	2302	>2330		2.57
410 MHz	<2257	2302	>2332		2.64
245 MHz	<2258	2312	>2339		3.08
15.4 GHz	<2339	2339	>2342	9/15	2.30
8.8 GHz	<2311	2337	>2339		1.81
DS type III	2301		2307		1
DS type IV	2307		0145		3

1991	May 13	■	AR 6615	To event 291	(2X0)
H _α	0135	0205	>0257	S07 W90	SN HM
1-12 keV	0103	0144	0222		M8.2
15.4 GHz	<0327	0338	>0539	[2.8\15]	2.04
5 GHz	<0236	0338	>0444		3.04
8.8 GHz	<0237	0338	>0423		2.61
2.8 GHz	0233	0341.6	0611		3.24
410 MHz	<0334	0336	>0539	[U0.4]	1.36
245 MHz	<0329	0330	>0539		3.18
100 MHz	0329	0331	0344		3.24
5 GHz	<0356	0356	>0412		2.08
2.7 GHz	<0356	0356	>0549	[P2.7]	2.92
1.4 GHz	<0236	0346	>0444		3.83
610 MHz	<0312	0344	>0458		2.38
200 MHz	0326	0343.1			3.71
100 MHz	0329	0343.2			2.59
DS type II	0121		0142		1
DS type IV	0145		0207		2

1991	May 18	■	AR6619	To event 292	(0X0)
H _α	0506	0622	0723	N18 W90 2N	K
	0530	0546	0851	N31 W87 2N	AEFTY
	<0540	0610	0800	N32 E90 2B	ABIK
1-12 keV	0437	0545	0846		X2.8
15.4 GHz	<0438	0446	>0447	[U2.7/15.4]	3.34
8.8 GHz	<0439	0446	>0447		3.11
5 GHz	<0439	0446	>0447		2.85
2.7 GHz	<0439	0446	>0447		2.71
1.4 GHz	<0441	0503	>0553	[P1.4]	3.54
950 MHz	0438	0503.3			3.21

80 GHz	0438	0506.8	0618		3.56
50 GHz	0440	0517	0840		3.90
35 GHz	0438	0513.3	0618		4.31
15.4 GHz	<0435	0513	>0553	U0.2 P15.4	4.56
8.8 GHz	<0435	0513	>0553		4.41
5.9 GHz	0433	0514.5	0530		4.32
5 GHz	<0438	0515	>0602		4.26
2.95 GHz	0437	0516.1	0535		3.82
950 MHz	0438	0513			3.10
610 MHz	<0446	0513	>0558		2.83
410 MHz	<0442	0513	>0539		2.67
245 MHz	<0504	0517	>0524		2.64
100 MHz	0507	0514.6			2.76
DS type IV	0506		0602		2
DS type II	0514		0527		2

1991	May 31	Ø	AR 6652	To event 294	(1X0)
H _α	0346	0405	0440	S08 E13	2N EFU
1-12 keV	0239	0245	0257		M3.8
	0400	0408	0428		M2.1
35 GHz	0404	0405.3	0412		2.18
15 GHz	0400	0405.3	0414	[U5.9] P15	2.44
9.1 GHz	0400	0405.3			2.39
5.9 GHz	0400	0406.1	0407		1.47
2.8 GHz	0353	0406.1	0423		2.42
950 MHz	0400	0405.5	0413		2.93
500 MHz	0400	0410.5	0413		3.00
410 MHz	<0400	0400	>0401		2.68
245 MHz	<0359	0400	>0404		3.18
100 MHz	0400	0402.6	>0415		2.79
DS type II	0508		0515		2
DS type IV	0518		0815		2

1991	May 31	Ø	AR 6654, 6654A	To event 294	(1X0)
H _α	0825	0842	0952	N07 E20	1B BEF
	0830	0842	0937	N09 E23	1N EFI
1-12 keV	0836	0858	1031		M1.6
15 GHz	0837	0848	0925		1.49
2.95 GHz	0824	0929	1157		1.3
DS type III	0818		0838		2
DS type S	0851		0902		2

1991	June 1	Ø	AR 6659	To event 295	(1X0)
H _α	1509	1540	>1635	N22 E90	1F HMY
1-12 keV	1456	1520	1726		X12.5
15.4 GHz	<1457	1507	>1612		4.73
8.8 GHz	<1457	1508	>1610		4.30
5 GHz	<1457	1505	>1557		3.93

2.7 GHz	<1458	1505	>1610		3.74
1.4 GHz	<1459	1505	>1534	U1.4/15.4	3.54
610 MHz	<1501	1502	>1556		3.73
410 MHz	<1502	1503	>1610		3.70
245 MHz	<1502	1507	>1612		4.32
DS type II	1503		1512		3
DS type IV	1504		1720		3

1991	June 2	Ø	AR 6652	To event 295		(1X0)
H _α	1350	1408	1747	S08 W20	2B	EFKMTZ
1-12 keV	1351	1426	1832		M2.8	
15 GHz	1352	1355.6	1359		1.54	
5.9 GHz	1350	1355.1	1356		2.01	
2.7 GHz	<1353	1354	>1454	[P2.7]	3.51	
280 MHz	1357	1357.8	1359		1.79	
19.6 GHz	1352	1419.6	1540		0.63	
15 GHz	1352	1422	1613		1.93	
8.8 GHz	<1353	1414	>1452		2.04	
5 GHz	<1353	1422	>1459	[P5]	2.38	
3 GHz	1348	1414.4	>1630		2.22	
1.4 GHz	<1353	1422	>1450		2.93	
610 MHz	<1354	1422	>1503		2.41	
410 MHz	<1355	1418	>1518	[P0.4]	3.32	
245 MHz	<1405	1412	>1454		3.04	
DS type II(?)	1412		1757		3	
DS type III/IV	1412		1757		3	

1991	June 4	Ø	AR 6659	To event 296		(2X0)
H _α	0334	0357	0612	N34 E75	2N	ABEFHIMU
1-12 keV	0337	0352	0800		X12.5	
80 GHz	0337	0341.2	0517	[P0.2] U0.5/80	5.13	
17 GHz	0336	0341.3	0556		4.87	
15.4 GHz	<0340	0341	>0532		4.84	
5 GHz	<0337	0339	>0453		4.20	
2.7 GHz	<0337	0339	>0453		4.04	
1.4 GHz	<0340	0341	>0532		3.80	
950 MHz	0337	0341.5	0451		3.80	
500 MHz	0337	0341.9	0601		3.36	
200 MHz	0339	0343.3	0536		>4.85	
100 MHz	0339	0344.1	0401		3.86	
9.1 GHz	0337	0348.6	0557	[U0.4]/9.1	4.67	
5 GHz	<0340	0349	>0532		4.23	
2.95 GHz	0336	0349.2			3.82	
410 MHz	<0339	0355	>0507		3.59	
100 MHz	0339	0351.4			4.30	
8.8 GHz	<0338	0426	>0609		3.38	
610 MHz	<0340	0421	>0532		3.32	
410 MHz	<0340	0423	>0532		3.18	

DS type IV	0340	0958	3
DS type II	0415	0431	1

1991	June 6	Ø	AR 6659	To event 296	(2X0)
H _α	0054	0107	>0215	N32 E45	3B EFHIJTUY
1-12 keV	0058	0108	0431		X12.5
80 GHz	0101	0106	0215		5.21
35 GHz	0101		0215	[U8.8 P35]	>5.25
17 GHz	0100	0108.7	0300		4.96
15.4 GHz	<0059	0104	>0237		4.88
8.8 GHz	<0043	0105	>0255		4.81
5 GHz	<0058	0105	>0255		4.83
2.8 GHz	0058	0106.2	>0148	P0.2 U0.4 [P2.8]	4.84
1.4 GHz	<0102	0106	>0317		4.38
410 MHz	<0102	0107	>0255		3.72
610 MHz	<0102	0108	>0251		4.11
245 MHz	<0105	0107	>0317		4.81
100 MHz	0105	0108.5	0217		>4.20
DS type III	0105		0110		3
DS type V	0105		0113		3
DS type IV	0105		0710		3
DS type II	0110		0120		2

1991	June 7	Ø	AR 6659	To event 296	(2X0)
H _α	0013	0038	0452	N29 E24	3N BEFIJKTU
1-12 keV	0025	0143	0300		M4.2
5 GHz	<0039	0039	>0123		2.23
1.4 GHz	<0036	0040	>0043		2.80
610 MHz	<0036	0038	>0123		2.23
200 MHz	0036	0036.6	0138		3.00
100 MHz	0032	0047.8	0152		3.00
17 GHz	0017	0051.3	0252		2.10
15.4 GHz	<0040	0051	>0220		2.18
8.8 GHz	<0029	0051	>0157		2.30
5 GHz	<0024	0056	>0220		2.43
2.8 GHz	0046	0053.4	>0146	[U0.6] P2.8	2.92
1.4 GHz	<0043	0054	>0123		2.60
610 MHz	<0035	0058	>0131		2.30
410 MHz	<0048	0105	>0114		2.34
DS type cont.	0034		0049		2
DS type III	0042		0045		2
DS type IV	0045		0314		2

1991	June 11	●	AR 6659	To event 297	(3X2)
H _α	0105	0227	0437	N32 W15	2B EFITVYZ
1-12 keV	0156	0209	0220		X12.5
	0121	0134	0154		M1.9
80 GHz	0157	0204.6	0327		3.99

35 GHz	0153	0204.6	0323	U0.5 P35	4.66
15.4 GHz	<0154	0206	>0400		4.60
8.8 GHz	<0155	0204	>0417		4.23
5 GHz	<0155	0204	>0426		4.08
2.7 GHz	<0153	0202	>0441		4.04
1.4 GHz	<0155	0204	>0441		4.04
610 MHz	<0155	0206	>0415		3.77
500 MHz	0155	0207	0224		3.40
245 MHz	<0202	0202	>0456		3.88
100 MHz	0204	0207.6	0456		3.87
15.4 GHz	<0338	0339	>0339		2.11
8.8 GHz	<0338	0338	>0339		2.15
5 GHz	<0338	0339	>0426		2.41
2.7 GHz	<0338	0338	>0515	U1.4 P2.7	2.48
1.4 GHz	<0330	0338	>2400		2.15
950 MHz	0331	0337.5			2.45
650 MHz	0327	0335.2			2.62
410 MHz	<0159	0332	>0456		3.43
DS type II	0205		0210		3
DS type IV	0210		0456		3
DS type III	0407		0413		2
DS type cont.	0407		1526		3

1991	June 11	Ø	AR 6659	To event 297	(3X2)
H _α	<2005	2017	>2325	N28 W41	1B UY
1-12 keV	2003	2132	2307		M5.3
15.4 GHz	<2014	2041	>2249		2.36
9.4 GHz	2014	2041.3	2132	[U1.4] P9.4	2.65
5 GHz	<2013	2041	>2249		2.45
2.7 GHz	<2014	2041	>2228		2.41
1.4 GHz	<2024	2036	>2228		2.28
245 MHz	<2022	2036	>2132		3.08
DS type IV	2031				2

1991	June 15	●	AR 6659	To event 298	(3X3)
H _α	0633	0820	1011	N36 W70	3B AEFHIJHM
1-12 keV	0810	0821	1402		X12.5
15.4 GHz	<0809	0814	>0928	[2.7-15.4]	4.40
8.8 GHz	<0813	0816	>0928		4.23
5 GHz	<0813	0816	>2400		4.32
2.7 GHz	<0813	0817	>0928		4.23
1.4 GHz	<0813	0817	>0953	[P1.4]	4.66
950 MHz	0813	0818.5	0921		3.74
650 MHz	0813	0814.4	>1003		3.64
204 MHz	0816	0817.8	0828	P0.2	5.00
100 MHz	0812	0820.4	>0919		>4.20
950 MHz	0813	0913.9			3.21
650 MHz	0813	0914.5			3.79

410 MHz	<0815	0912	>1009	0.40.95	4.23
DS type DCIM	0646		0646		2
DS type IIIRS	0803		0804		2
DS type II/IV	0814		1146		3
DS type III	0814		1146		3
DS type DCIM	0814		0838		2
DS type cont.	0817		1115		2
DS spikes	0856		1016		1

1991	June 28	○	AR 6693. 6699	To event 299	(1X0)
H _α	0452	0454	0520	S08 E08	SN DFU
	0715	0721	0815	S07 E05	SN DEFL
	0800	0803	0831	N12 E69	1N EFU
1-12 keV	0454	0626	1028		M6.0
245 MHz	<0456	0456			1.81
DS type IIIN	0504		0552		1
DS type cont.	0507		0612		1

1991	July 1	●	AR 6703	To event 300	(2X0)
H _α	0126	0234	0330	N28 E78	1N EF
1-12 keV	0124	0240	0327		M5.8
8.8 GHz	<0141	0141	>0142		1.04
5 GHz	<0130	0141	>0359		1.86
2.8 GHz	0125	0141	0207		1.85
5 GHz	<0211	0214	>0216		1.23
2.7 GHz	<0139	0210	>2400		1.96
1.4 GHz	<0209	0210	>0216		1.67
15.4 GHz	<0210	0232	>0233		1.57

1991	July 7	●	AR 6703	To event 301	(3X0)
H _α	0120	0123	0450	N28 E00	3B BFHIJKTU
1-12 keV	0119	0223	0610		X1.9
15.4 GHz	<0122	0123	>0126		1.82
8.8 GHz	<0120	0123	>0137		2.20
5 GHz	<0120	0123	>0137	U0.6 P5	2.38
2.7 GHz	<0120	0123	>0137		2.26
1.4 GHz	<0122	0123	>0132		2.26
610 MHz	<0122	0123	>0126		1.81
410 MHz	<0125	0127	>0128		2.32
8.8 GHz	<0147	0156	>0247	2.8x8.8	2.52
5 GHz	<0149	0154	>0247		2.81
2.8 GHz	0141	0154.2	0230		3.07
1.4 GHz	<0144	0208	>0234		2.62
610 MHz	<0145	0203	>0228		3.26
410 MHz	<0145	0208	>0227	P0.4	3.41
245 MHz	<0148	0208	>0233		2.85
100 MHz	0150	0207.8	0235		2.97
15.4 GHz	<0150	0234	>0247		2.36

DS type III	0150	0157	2
DS type cont.	0153	0225	2
DS type II	0206		2
DS unclassified	0209	0232	1
	0235	0240	2

1991	July 10	●	AR 6718	To event 302	(1X0)
H _α	1159	1207	1414	S22 E32	2N BCDEFIKZ
1-12 keV	1202	1228	1452		M13.6
2.7 GHz	<1201	1201	>1243		3.00
950 MHz	1155	1204.5	1239		2.90
610 MHz	<1200	1205	>1240		2.85
536 MHz	1200	1205.5	1344		2.59
410 MHz	<1203	1205	>1210		2.46
245 MHz	<1205	1206	>1207	U0.4/2.7	2.53
100 MHz	1203	1209.7			3.62
19.6 GHz	1205	1214.6	1302		0.85
15.4 GHz	<1206	1214	>1243		2.08
11.8 GHz	1202	1214.6	1302		1.22
8.4 GHz	1200	1211.5	1302		1.42
5 GHz	<1203	1211	>2400		2.72
2.95 GHz	1200	1211.5			2.80
1.4 GHz	<1201	1223	>1243	P1.4/19.6	2.91
950 MHz	1155	1222.4			2.70
650 MHz	1156	1222.5			2.45
DS type III	1200		1531		3
DS type DCIM	1200		1201		1
DS spikes	1203		1212		2
DS type II/IV	1203		1531		3
DS type cont.	1204		1210		1
DS type DCIM	1224		1227		1
DS type cont.	1301		1510		3

1991	July 11	Ø	AR 6711	To event 302	(1X0)
H _α	0835	0838	1143	N23 W52	3B EFGKTUY
1-12 keV	0928	1037	1316		M17.3
	0834	0837	0840		C1.8
	<0845	0854	>0919		C5.8
15.4 GHz	<0932	0936	>0948		2.38
8.8 GHz	<0931	0936	>0947		2.56
5 GHz	<0930	0935	>0935	P5	3.18
2.7 GHz	<0930	0935	>0935		2.98
1.4 GHz	<0931	0934	>0935		2.40
950 MHz	0930	0935.8	1024		2.10
650 MHz	0930	0936.8	1024		1.66
9.3 GHz	1018	1021.2	1024		1.18
5.9 GHz	1016	1020.8	1024		1.93
5 GHz	<1018	1020	>1023		1.79

2.7 GHz	<1003	1019	>1101		2.04
1.4 GHz	<1001	1019	>1036	P1.4	2.20
950 MHz	0930	1019.5			1.93
650 MHz	0930	1019.1			1.76
200 MHz	1023	1024.5	1024		3.00
127 MHz	1014	1015	1016		2.80

1991	August 3	O	AR 6757	To event 303	((0)X0)
H _α	0122	0123	>0154	N25 E06	1B E
1-12 keV	0121	0125	0129		M2.9
15.4 GHz	<0121	0122	>0125	[P0.2] U0.6/15.4	3.45
8.8 GHz	<0121	0122	>0126		3.36
5 GHz	<0121	0122	>0126		3.15
2.8 GHz	0120	0122.3	0135		2.72
1.4 GHz	<0121	0122	>0124		2.75
610 MHz	<0121	0122	>0125		2.41
410 MHz	<0122	0122			3.04
245 MHz	<0121	0122	>0125		4.99
100 MHz	0121	0121.5	0122		>4.20
DS type III	0121		0129		3
DS type IV	0134		0946		3

1991	August 3	O	AR 6757	To event 303	((0)X0)
H _α	0324	0350	0516	N19 W02	1B E
1-12 keV	0308	0409	0511		M1.4
15.4 GHz	<0409	0409	>0410		1.48
9.1 GHz	<0303	0419.4	>0854	U0.95 P9.1	1.78
5 GHz	<0405	0409	>0417		1.65
2.7 GHz	<0406	0416	>0417		1.68
1.4 GHz	<0412	0416	>0417		1.62
950 MHz	0411	0412.6	0417		1.41
650 MHz	0411	0413.1	0413		2.26
245 MHz	<0419	0421	>0430		3.11
5 GHz	<0442	0442			1.86
2.7 GHz	<0442	0442		U0.95 [P2.7]	1.92
950 MHz	0446	0447.4	0451		1.56
610 MHz	<0439	0442	>0443		2.18
410 MHz	<0439	0442	>0443		2.18
200 MHz	0400	0442.1	0532		2.78
100 MHz	0410	0454	0613		3.18
DS type cont.	0425		1740		3
DS type IV	0430		0610		2

1991	August 25	●	AR 6805	To event 304	(2X0)
H _α	0026	0049	0352	N23 E76	2B EFLIKTUY
1-12 keV	0039	0115	0516		X2.1
15.4 GHz	<0031	0051	>0306		3.53
8.8 GHz	<0035	0051	>0238	P5-8.8	3.60

5 GHz	<0035	0052	>0251		3.61
2.8 GHz	0033	0053.1	>0240		3.54
610 MHz	<0038	0101	>0220		2.83
410 MHz	<0038	0057	>0212		2.79
245 MHz	<0040	0044	>2400	U0.2	2.26
100 MHz	0046	0102.7	0118		2.95
1.4 GHz	<0038	0153	>0231		4.41
DS type III	0045		0055		2
DS type IV	0052		0219		3

1991	September 29	●	AR 6858A	To event 305	(0X0)
H _α	1513	1528	1739	S21 E31	3B FSUY
1-12 keV	1512	1533	1642		M7.3
15.4 GHz	<1516	1539	>1724		2.23
8.8 GHz	<1516	1526	>1717		2.34
5 GHz	<1514	1526	>1706		2.67
2.7 GHz	<1513	1526	>1706	U0.6 P2.7	2.86
1.4 GHz	<1512	1526	>1654		2.77
610 MHz	<1511	1528	>1641		2.20
410 MHz	<1515	1529	>1638		2.72
245 MHz	<1516	1519	>1620		2.34
DS type cont.	1515		1552		2
DS type V	1516		1520		2
DS type IV	1523		1538		3

1991	September 30	∅	AR 6842	To event 305	(0X0)
H _α	1533	1536	1558	S12 W61	1F EFK
1-12 keV	<1533	1536	>1558		C5.1 OET
DS type III	1529		1533		1

1991	September 30	∅	AR 6850	To event 305	(0X0)
H _α	2113	2120	2342	S12 E06	SN EFK
1-12 keV	2223	2232	2242		M1.0
DS type III	2120		2121		1
DS type V	2122		2124		2

1991	October 27	⊙	AR 6891	To event 306	(1X0)
H _α	0538	0544	0656	S13 E17	2B EFH
1-12 keV	0537	0548	0712		X6.1
80 GHz	0539	0542.8	0554		2.83
35 GHz	0539	0542.8	0602		3.83
17 GHz	0539	0542.8	0602		3.82
15.4 GHz	<0539	0540	>0619	U2.8 P8.8-15.4	4.11
8.8 GHz	<0536	0540	>0619		4.11
5.9 GHz	0508	0540.5	0546		3.93
5 GHz	<0538	0542	>0619		3.82
2.8 GHz	0538	0542.2	0616		3.65
1.4 GHz	<0510	0542	>0615	U0.95 P1.4	3.76

950 MHz	0539	0542.8	0616	3.04
610 MHz	<0539	0539	>0617	3.26
410 MHz	<0539	0539	>0619	3.65
200 MHz	0530	0539.4	0636	4.64
100 MHz	0530	0641.4		4.78
DS type III	0531		0537	3
DS type IV	0539		1036	3
DS type II	0540		0545	3

1991	October 30	●	AR 6891	To event 307	(1X0)
H _α	0538	0544	0656	S13 E17	2B EFH
1-12 keV	0537	0548	0712		X6.1
35 GHz	0615	0622	0707		2.51
17 GHz	0615	0622	0707		2.68
15.4 GHz	<0616	0621	>2400		2.80
8.8 GHz	<0615	0621	>0733		3.08
5.9 GHz	0610	0621.8	0634		3.28
5 GHz	<0615	0621	>0714		3.23
2.8 GHz	0615	0619	0655		>3.88
1.4 GHz	<0615	0620	>0646	[U0.95 P1.4]35	4.48
950 MHz	0610	0622.4	0657		2.83
200 MHz	0622	0622.9	0712	[P0.2]	4.70
127 MHz	0622	0625	0629		>4.12
610 MHz	<0616	0628	>0647		3.43
410 MHz	<0620	0652	>0700		2.91
DS type III	0622		0630		3
DS type V	0623		0626		3
DS type II	0625		0820		3
DS type IV	0630		1016		3
DS type III	0639		0650		3
DS type cont.	0643		1215		2

1991	November 15	●	AR 6919	To event 308	(0X0)
H _α	2234	2238	2314	S14 W19	2B FH
1-12 keV	2233	2239	2254		X1.5
80 GHz	2234	2237.7	2254		1.90
35 GHz	2234	2237.7	2304		2.99
17 GHz	2234	2237.7	2304	U1.4 P5-17	3.23
15.4 GHz	<2236	2237	>2249		3.28
8.8 GHz	<2235	2237	>2249		3.15
5 GHz	<2234	2237	>2247		3.26
2.7 GHz	<2234	2237	>2242		3.04
1.4 GHz	<2237	2237	>2241		2.34
610 MHz	<2236	2239	>2246		2.46
410 MHz	<2234	2240	>2246		2.76
200 MHz	2234	2240.5	2254	P0.2	4.70
100 MHz	2234		2253		>3.00
DS type III	2215		2216		2

	2234	2240	3
DS type II	2237	2307	3

1991	November 16	☉	AR 6919	To event 308	(0X0)
H α	0434	0456	0527	S14 W18	1N EF
1-12 keV	<0434	0501	>0549		C5.7
2.8 GHz	0405	0407	0416		1.31
245 MHz	<0427	0427	>0428		2.34
DS type III	0428		0429		1

1991	November 17	☉	AR 6919	To event 309	(0X0)
H α	0154	0158	0226	S14 W34	1N EFM
1-12 keV	0153	0201	0217		M1.5
80 GHz	0157	0158.1	0202		1.40
35 GHz	0157	0158.1	0202		1.95
17 GHz	0157	0158.1	0202		2.41
15.4 GHz	<0157	0158	>0200		2.57
8.8 GHz	<0157	0158	>2400		2.90
5 GHz	<0155	0157	>0203	U0.6 P5	3.18
2.8 GHz	0155	0158.1	0208		2.91
1.4 GHz	<0157	0203	>0204		2.28
610 MHz	<0157	0157	>0159		2.08
410 MHz	<0157	0157	>0158		2.73
200 MHz	0155	0202.4	0203	P0.2	3.54
100 MHz	0154		0207		>3.00
DS type V	0154		0202		3
DS type III	0154		0159		2
DS type II	0201		0218		3

1991	December 28	☉	AR 6982	To event 310	(0X0)
H α	2108	2112	2346	S15 W47	SN EFHKTUY
1-12 keV	2108	2111	2120		M7.8
	2127	2323	2453		M2.7
8.8 GHz	<2109	2109	>2111		2.63
5 GHz	<2108	2109	>2112	P2.7-5	2.77
2.7 GHz	<2109	2109	>2113		2.79
1.4 GHz	<2109	2110	>2113		2.38
DS unclassified	2140		2150		1
DS type cont.	2150		2245		1

1992	January 4	☉	AR 6993	To event 311	(0X0)
H α	1625	1714	1815	S10 E34	SF F
1-12 keV	1712	1716	1900		M1.3
15.4 GHz	<1713	1714	>1715		2.18
8.8 GHz	<1713	1714	>1715		2.00
5 GHz	<1713	1714	>1715		2.04
410 MHz	<1743	1744	>1811		2.94
15.4 GHz	<1755	1759	>1837		1.61

8.8 GHz	<1752	1758	>1819		1.79
5 GHz	<1733	1758	>1853		2.28
2.7 GHz	<1733	1758	>1853	P2.7	2.41
1.4 GHz	<1741	1759	>1834		2.28
610 MHz	<1755	1759	>1822		2.08
DS type III	1632		1632		2

1992	February 6	○	AR 7042		To event 312	(1X0)
H _α	0928	1005	1401		S13 W09	2B EFTZ
1-12 keV	0939	1048	1201			M4.4
15.4 GHz	<1001	1004	>1013			1.90
11.8 GHz	0940	1005	1107			1.07
8.8 GHz	<0953	1003	>1148			2.20
5 GHz	<0949	1002	>1225			2.58
2.8 GHz	0946	1002.9		[U0.95] P2.8		2.72
950 MHz	0951	1003.5				2.26
650 MHz	0950	1003.5	1044			2.34
260 MHz	<0930	1008.5	>1230			2.70
9.1 GHz	0909	1021.7	1300			2.04
2.8 GHz	0946	1022.3				2.52
1.4 GHz	<0951	1019	>1050			2.49
950 MHz	0951	1019.7				2.80
650 MHz	0950	1020.4				2.60
410 MHz	<0955	1019	>1049			2.56
245 MHz	<1001	1020	>1030			2.56
650 MHz	0950	1037.5				2.52
204 MHz	1034	1037	1041			2.54
127 MHz	1036	1037	1041			3.08
DS type IV	1010		1442			2
DS type DCIM	1017		1025			2

1992	February 7	○	AR 7035		To event 312	(1X0)
H _α	1140	1202	1417		S21 W53	2B FKU
1-12 keV	1141	1159	1313			M3.7
2.95 GHz	1141	1143.3	1150			0.95
200 MHz	1144	1144.7	1145			3.69
100 MHz	1144	1144.8	1145			4.45
50 GHz	1151	1154.5	1207			2.42
35 GHz	1149	1154.4	1203			2.63
19.6 GHz	1145	1154.5	1226			2.79
15.4 GHz	<1153	1154	>1157			2.80
8.8 GHz	<1152	1154	>1203	U1.4 P8.8		2.86
5 GHz	<1152	1154	>1157			2.66
2.7 GHz	<1151	1154	>1203			2.34
1.4 GHz	<1151	1154	>1158			2.18
950 MHz	1150	1154.2	1158			2.33
610 MHz	<1150	1156	>1225			2.83
410 MHz	<1150	1156	>1214	P0.4		3.11

204 MHz	1157	1159	1202	2.26
127 MHz	1154	1156	1306	3.08
DS type II/IV	1144		1319	3
DS type III	1144		1319	3
DS type V	1144		1145	3
DS type cont.	1150		1204	2

1992	March 7	○		To event 313	(0X0)
1-12 keV	~08		~18		C2.0
DS type III	0837		0841		2
DS type cont.	0835		0910		3
DS type II	0838		0857		3
DS type IIIRS	0900		0901		3
DS type IV	0917		1015		1

1992	March 15	●	AR 7100		To event 314	(0X0)
H _α	0120		0130	0331	S15 E27	2B EFK
1-12 keV	0122		0154	0450		M7.8
15.4 GHz	<0130		0145	>0312		2.23
8.8 GHz	<0127		0145	>0302		2.54
5 GHz	<0126		0145	>0312		2.88
2.7 GHz	<0125		0150	>0312		3.15
1.4 GHz	<0122		0135	>0304		3.56
610 MHz	<0126		0144	>0304		3.73
200 MHz	0126		0126.9	0359		3.11
100 MHz	0128		0133.1	0401		3.63
DS type II	0127			0153		3
DS type IV	0153			1023		3

1992	April 20	○	AR 7135		To event 316	(0X0)
H _α	1855		1900	1952	S16 E31	1N EF
1-12 keV	1855		1900	2001		C5.9
9.5 GHz	1907		1915	>2230		1.2
DS type III	1917			1917		1

1992	May 8	●	AR 7154		To event 317	(3X0)
H _α	1513		1530	1916	S25 E07	2N FKUYZ
1-12 keV	1512		1546	1610		M7.4
35 GHz	1507		1600.4	1645		2.63
15.4 GHz	<1520		1557	>1636		2.97
8.8 GHz	<1518		1557	>1635		3.26
5 GHz	<1517		1557	>1643		3.48
2.7 GHz	<1514		1603	>1646		3.56
1.4 GHz	<1514		1608	>1655		4.89
610 MHz	<1521		1607	>1617		3.76
410 MHz	<1516		1551	>1621		4.15
245 MHz	<1519		1553	>1656		4.36
DS type V	1516			1519		3

DS type III	1517	1534	3
DS type IV	1519	1729	3
DS type cont.	1520	1620	3
DS type II	1528	1538	3
DS spikes	1542	1545	2
DS type cont.	1637	1717	2

1992	May 7	Ø	To event 317		(3X0)
H _α	0635	0652	0823	S21 E48	2N
1-12 keV	<0649	0649	0818		C3.4
9.3 GHz	0643	0722.9	0859		1.34
2.95 GHz	0649	0732.5	1000		1.28
33 MHz	0644	0644.5	0703		
DS type II	0643		0703		3
DS type IV	0644		0703		3
DS unclassified	0645		0645		1
DS type III	0659		0700		2

1992	May 24	■	AR 7167	To event 318		(0X0)
H _α	<0353		0410	>0420	S11 W90	
1-12 keV	0430		0533	0725		C1.1

1992	June 25	●	AR 7205	To event 319		(2X0)
H _α	1749	1755	2229	N09 W69	1B	FFKTUY
1-12 keV	1749	1757	1904		M1.4	
	1951	2014	2057		X3.9	
50 GHz	1744	1749.5	1756		1.80	
15.4 GHz	<1752	1754	>1808		2.60	
8.8 GHz	<1751	1754	>1808	P8.8	2.83	
5 GHz	<1752	1754	>1808		2.61	
2.7 GHz	<1753	1755	>1802		2.00	
15.4 GHz	<1955	2004	>2149		4.82	
8.8 GHz	<1950	2012	>2149		4.30	
5 GHz	<1952	2013	>2144		4.08	
2.7 GHz	<1953	2018	>2134		3.71	
410 MHz	<1951	2000	>2122		3.15	
245 MHz	<1951	2000	>2120		3.18	
100 MHz	1954	2006	2034		>3.00	
1.4 GHz	<1954	2041	>2120		4.30	
610 MHz	<1951	2051	>2118		3.36	
280 MHz	1950	2103	>2114		>3.40	
DS type III	1804		1805		2	
	1912		1919		1	
	1954		1956		1	
DS type IV	1957		2121		2	

1992	June 28	■	AR 7205	To event 320	(1X0)
H _α	0514	0520	0613	N11 W90	SN ABDFK
1-12 keV	0445	0514	0620		X1.8
15.4 GHz	<0451	0455	>0500		3.57
8.8 GHz	<0448	0456	>0500	U0.4 P8.8	3.65
5 GHz	<0442	0455	>0550		3.46
2.7 GHz	<0440	0455	>0549		3.11
1.4 GHz	<0443	0455	>0536		2.48
950 MHz	0442	0455.7			2.33
650 MHz	0443	0455.7			1.85
410 MHz	<0452	0455	>0457		1.54
245 MHz	<0450	0452	>0457		2.79
100 MHz	0450	0454.4	0459		3.00
33 MHz	0452	0455.5	0456		
DS type III	0450		0456		3
DS type S	0451		0530		2
DS type V	0451				2
DS type II	0455		0458		3

1992	October 5	○	AR 7305	To event 321	(0X0)
H _α	1506	1523	1603	N10 E23	1B F
1-12 keV	1509	1522	1601		M1.4
15.4 GHz	<1517	1518	>1533		1.95
8.8 GHz	<1516	1518	>1533	U1.4 P5-8.8	2.46
5 GHz	<1516	1518	>1533		2.48
2.7 GHz	<1516	1518	>1523		2.15
1.4 GHz	<1517	1521	>1532		1.97
610 MHz	<1516	1521	>1529	P0.6	2.66
245 MHz	<1516	1516	>1518		2.38
410 MHz	<1516	1518	>1532		2.28
33 MHz	1516		1532		
610 MHz	<1536	1537	>1537		1.76
410 MHz	<1536	1542	>1543		2.11
245 MHz	<1540	1543	>1545		2.04
DS type IV	1516		1812		3
DS type S	1516		1527		3
DS type III/I	1516		1551		3

1992	October 30	●	AR 7321	To event 322	(4X0)
H _α	1702	1707	2203	S26 W63	2N FKUY
1-12 keV	1659	1816	1916		X1.7
15.4 GHz	<1701	1750	>2013		3.75
8.8 GHz	<1700	1750	>2013		3.95
5 GHz	<1658	1750	>2013	[U1.4] P5	4.00
2.7 GHz	<1700	1748	>2013		3.89
1.4 GHz	<1702	1751	>2013		3.38
610 MHz	<1702	1807	>2013		3.88
410 MHz	<1705	1810	>2013		3.54

280 MHz	1705	1810.2	>1859	4.32
DS type IV	1730		1945	1
DS type III	1847		1847	1
DS type cont.	1917		2442	1

1992	November 2	■	AR 7321	To event 323	(3X0)
H _α	0310		0314	S23 W90	2B
1-12 keV	0231		0308		X9.0
80 GHz	0249		0253.9		3.91
35 GHz	0249		0253.9		4.63
15.4 GHz	<0245		0254	[P15.4]	4.72
8.8 GHz	<0242		0301		4.26
5 GHz	<0238		0307		3.94
2.7 GHz	<0244		0253		3.70
1.4 GHz	<0248		0310		4.38
610 MHz	<0248		0253		3.04
410 MHz	<0249		0253		2.92
200 MHz	0248		0248.8	0258	3.54
100 MHz	0249		0254	0255	2.70
DS type III	0249			0253	3
DS type II	0253			0302	3
DS type IV	0302			1018	3
DS type III	0317			0319	3

1992	November 23	●	AR 7342	To event 324	(0X0)
H _α	2018		2029	S08 W89	SF
1-12 keV	2014		2031		M14.4
15.4 GHz	<2023		2025		2.34
8.8 GHz	<2023		2033	P5-8.8	2.41
5 GHz	<2023		2033		2.41
2.8 GHz	2015		2031		2.20
1.4 GHz	<2024		2024		1.36
DS type II	2026			2048	2
DS type III	2048			2057	1

1992	November 29	⊙		To event 325	(0X0)
1-12 keV	0815		0858	1032	C9.1
9.1 GHz	0821		0900	>0903	1.15
DS type II	0828			0836	2

1992	November 29	⊙	AR 7351	To event 325	(0X0)
H _α	1230		1233	S16 E00	1B EF
1-12 keV	1228		1234		M11.4
11.8 GHz	1229		1231.1	3.1M1.8	1.18
8.4 GHz	1229		1231		1.34
5.2 GHz	1228		1230.7		1.57
3.1 GHz	1228		1230.4		1.71

1993	March 4	●	AR 7434	To event 326		(1X0)
H _α	1214		1222 1341	S13 W55	1N	EFIKU
1-12 keV	1217		1225 1357		C8.1	
8.8 GHz	1221		1224 1241	[U1.4]/8.8	1.70	
5 GHz	1220		1221 1241		1.58	
2.7 GHz	1221		1221		1.38	
1.4 GHz	1221		1221 2400		1.26	
610 MHz	1220		1226 1236		1.60	
410 MHz	1222		1223 1223		1.45	
245 MHz	1222		1223 1225		1.90	
127 MHz	1223		1224 1225		>2.51	
15.4 GHz	1221		1241 1241		1.60	
2.7 GHz	1221		1242 1243		1.48	
610 MHz	1253		1253		1.71	
410 MHz	1250		1253 1254		2.28	
245 MHz	1249		1253 1254		1.49	
33 MHz	1232		1251			
DS type II(?)	1214		1312		3	
DS type III	1223		1229		3	
DS type IV	1232		1240		3	
DS type III	1300		1306		3	
	1341		1350		3	

1993	March 6	●	AR 7440	To event 327		(0X0)
H _α	1944		2027 2213	S04 E29	2B	EFZ
1-12 keV	2017		2049 2114		M7.7	
15.4 GHz	2023		2024 2106	[2.7-5]/15.4	1.89	
8.8 GHz	2018		2024 2400		2.20	
5 GHz	2018		2024 2400		2.54	
2.7 GHz	2018		2023 2046		2.57	
610 MHz	2015		2024 2045		3.00	
410 MHz	2015		2023 2053	P0.4	3.20	
245 MHz	2024		2024 2025		2.51	
2.8 GHz	2019		2033.4 2050		2.47	
1.4 GHz	2018		2033 2108		2.52	
410 MHz	2015		2033 2046		3.20	
245 MHz	2023		2037 2106		2.70	
15.4 GHz	2022		2050 2159		2.11	
9.5 GHz	2018		2041.2 2101		2.29	
DS type V	2021		2026		2	
DS type II	2026		2054		2	
DS type IV	2055		2217		1	

1993	March 12	●	AR 7440	To event 328		(1X0)
H _α	1703		1801 1932	S03 W48	3B	UYZ
1-12 keV	1607		1815 1847		M7.0	
1.4 GHz	1740		1749 2002		2.82	
245 MHz	1744		1756 2002		2.74	

9.5 GHz	1738	1802.2		2.62
5 GHz	1742	1802	2002	2.90
2.7 GHz	1742	1802	2002	3.08
235 MHz	1747	1804	1951	2.56
15.4 GHz	1743	1841	2400	2.63
9.5 GHz	1738	1841.3	1952	2.71
5 GHz	1744	1841	2400	2.69
2.7 GHz	1744	1841	2400	3.04
610 MHz	1747	1842	2002	2.41
410 MHz	1744	1841	2400	2.04
DS type III	1745		1750	1
DS type II	1752		1808	2
DS type IV	1755		1927	2

1993	May 14	●	AR 7500	To event 329	(0X0)
H _α	2154	2249	2436	N20 W48	2N EUJZ
1-12 keV	2154	2253	>2458		M4.4
8.8 GHz	2204	2205	2205		1.62
1.4 GHz	2204	2205	2206		1.53
245 MHz	2239	2239	2240		1.62
DS type III	2241		2241		2
DS type S	2241		2302		2
DS type IV	2244		2328		3

1993	June 7	●	AR 7518	To event 330	(0X0)
H _α	1354	1422	1635	S10 W30	2B EFUZ
1-12 keV	1354	1422	1712		M5.4
50 GHz	1415	1422.4	1442		2.16
35 GHz	1411	1421.8	1503		2.49
15.4 GHz	1411	1421	1510		2.94
8.8 GHz	1413	1421	1440		2.95
5 GHz	1409	1421	1457	[P5]	3.23
2.7 GHz	1409	1421	1451		3.04
1.4 GHz	1413	1421	1433		3.08
610 MHz	1416	1420	1455		3.20
410 MHz	1418	1421	1431		2.58
260 MHz	1419	1421	1430		2.43
33 MHz	1426	1427.2	1428		2.36
808 MHz	1442	1444.5	1452		1.89
410 MHz	1418	1444	1455		3.15
245 MHz	1419	1444	1500		2.85
DS type II	1423		1433		3
DS type IV	1434		1815		3

1994	February 20	●	AR 7671	To event 332	(3X0)
H _α	<0138	0138	>0308	N09 W02	3B UZ
1-12 keV	0104	0141	0216		M4.0
5 GHz	0105	0119	0230		2.08

2.7 GHz	<0109	0114	>0230		2.28
1.4 GHz	0105	0119	0230		2.34
610 MHz	0105	0110	0230	P0.6	2.70
410 MHz	0105	0109	0230		2.49
15.4 GHz	0114	0134	0232	U8.8/15.4	2.15
8.8 GHz	0114	0147	0232		1.96
5 GHz	<0108	0146	>0230		2.15
1.4 GHz	<0107	0136	>0230		2.52
410 MHz	0107	0140	0232	{P0.4}	3.52
245 MHz	0106	0140	0248		3.38
DS type II	0108		0117		3
DS type IV	0116		0554		3

1994	October 19	●	AR 7790	To event 333	(1X0)
H _α	2235		2313	2351	N12 W24 IF
1-12 keV	2047		2127	2201	M3.2
8.8 GHz	2111		2111	2114	1.43
5 GHz	2100		2111	2115	1.69
2.7 GHz	2059		2103	2115	1.97
1.4 GHz	2054		2103	2115	P1.4 2.11
610 MHz	2100		2103	2115	1.54
410 MHz	2100		2101	2115	1.72
235 MHz	2052		2108.9	>2134	1.72
DS type III	2056			2059	2
	2318			2318	1
DS type II	2057			2115	3
DS type IV	2100			2620	3
	<2300			>2400	2

1995	October 20	●	AR 7912	To event 334	(1X0)•
H _α	0553		0558	0708	S11 W53 1N FUZ
1-12 keV	0510		0607	0645	M1.5
15.4 GHz	0553		0558	0611	2.43
8.8 GHz	0551		0557	0615	2.78
5 GHz	0550		0557	0619	2.99
2.8 GHz	0548		0557.3	0620	U0.6 P2.8 3.31
1.4 GHz	0549		0603	0617	2.52
610 MHz	0551		0557	0610	2.32
410 MHz	0550		0555	0610	2.59
200 MHz	0548		0557.4	0623	2.83
DS type III	0551			0624	2
DS type IV	0554			0707	3
DS type II	0555			0602	3
DS type IS	<0555			0656	2
DS type cont.	<0555			0659	2
DS type II	0558			0608	3

The Summary Table for events covering 1987-1996

No. of SPE	Date of events. Y/M/D	The time of the peak intensity	Observation instruments	The range of the proton energy, MeV	γ'	$J_{\max}(E_p > 10$ MeV), p/ cm ² s ⁻¹ sr ⁻¹
1	2	3	4	5	6	7
207	87/05/29	18-24	MET, IMP8, GOES	5-50	2.7	1.3
208	87/10/16	12-13	MET	5-30	3.1	4.1
209	87/11/08	10-12	MET, IMP8, GOES	10-60	3.4	38.1
210	87/12/29	30d21-31d07	IMP8, GOES	10-50	3.1	5.8
211	88/01/02	3d(09-11)	MET, IMP8, GOES	10-50	3.0	94.8
212	88/03/25	25d23-26d01	MET, IMP8, GOES	10-100	1.8	35.3
213	88/06/30	11-15	MET, IMP8, GOES	5-60	2.1	13.0
214	88/08/24	24d08-25d07	MET, GOES	5-50	1.9	1.5
		26d01	MET, IMP8, GOES	5-40	4.0	5.0
215	88/09/27	28d(06-15)	MET, IMP8, GOES	10-100	1.2	1.0
216	88/10/05	07-19	MET, IMP8, GOES	5-40	3.1	1.4
217	88/10/12	07-12	MET, GOES	10-100	1.5	7.1
218	88/10/13	13d23-14d04	MET, IMP8, GOES	5-100	1.6	1.7
219	88/11/08	8d16-9d02	MET, IMP8, GOES	10-100	1.4	11.7
220	88/11/14	00-04	MET, GOES	10-60	1.5	6.6
221	88/11/24	11-14	IMP8, GOES	13.7-60	1.0	0.7
		25d(02-08)	MET, IMP8, GOES	5-60	1.8	1.2
222	88/12/13	12-13	MET	5-25	2.2	3.0
223	88/12/14	15d(03-08)	MET	5-90	1.4	12.7
			GOES	30-100		
224	88/12/16	16d18-17d13	MET, GOES BAL	10-100	1.2	11.8
			MET BAL	100-600	1.8	
225	88/12/27	12-16	MET	5-60	1.6	5.8
			GOES	30-100		
226	88/12/29	01-04	MET, GOES	5-50	2.6	1.4
227	89/01/04	4d20-5d03	MET, GOES	5-60	3.2	5.5
228	89/03/07	9d10-10d02	GOES	10-60	3.3	131.5
229	89/03/10	11d(11-22)	MET, GOES	5-100	2.2	41.7
		13d(07-09)	MET, GOES	5-60	3.3	180.0
230	89/03/17	18d(08-11)	MET, GOES	10-60	3.6	1107.5
231	89/03/23	21-24	MET, GOES	5-100	2.4	52.2
232	89/04/09	11d(07-12)	MET, GOES	5-40	3.3	6.26
233	89/04/11	12d(00-04)	MET, GOES	5-60	3.6	159.3
		13d(02-06)	MET, GOES	5-40	3.6	77.7
234	89/04/22	23d(07-18)	MET, GOES	5-60	1.9	8.8
235	89/05/05	11-21	MET, GOES	5-30	3.6	8.0
		6d(11-14)	MET, GOES	5-50	4.3	21.1
236	89/05/20	21d(04-06)	MET, GOES	15-90	1.0	4.5
		23d(13-15)	MET, GOES	10-100	1.4	21.3

a) γ is the spectral index of the integral proton spectrum at the time of the maximum intensity.

1	2	3	4	5	6	7
237	89/06/14	<2224 1920 16d(01-07)	MET GOES GOES	5-25 10-50 10-60	1.7 1.0 1.2	3.3 0.047 0.37
238	89/06/18	17-20 <2150 19d(09-12)	GOES MET MET. GOES	30-100 5-90 10-60	1.4 1.7 1.7	21.7 9.5 1.3
239	89/06/20	20d23-21d03	MET. GOES	5-30	2.1	1.0
240	89/06/29	08-11	MET. GOES	5-50	2.8	2.3
241	89/06/29	29d23-30d01	MET. GOES	5-50	2.7	6.4
242	89/06/30	1d(03-07)	MET. GOES	5-50	2.8	2.5
243	89/07/25	11-14 <1706 0903	GOES MET NM	30-100 5-90 433-3015	1.0 1.3 2.2	64.4 32.9
244	89/08/12	13d(05-09) 13d(05-09) 13d09	MET. GOES MET. GOES BAL	5-40 40-100 150-300	1.2 3.9 3.1	6629.0
245	89/08/15	17-23	MET. GOES	5-60	3.0	505.0
246	89/08/16	05-16 07-09 03 03	MET. GOES BAL NM NM	5-100 150-500 433-1630 1630-3700	1.4 3.0 2.3 3.6	1253.8
247	89/08/17	10-17 08	MET. GOES BAL	5-60 100-300	1.6 4.3	899.0
248	89/08/19	20d(03-04)	GOES	10-100	2.0	283.6
249	89/08/22	22d18-23d03	MET. GOES	5-60	2.4	51.2
250	89/09/03	4d(05-10)	MET. GOES	5-50	3.3	8.9
251	89/09/12	13d(08-11)	MET. GOES	5-60	2.4	17.8
252	89/09/16	07-12	MET. GOES	5-60	1.7	2.5
253	89/09/29	16-24 13-16 13	MET. GOES BAL. NM NM	5-100 300-6095 600-10000	1.1 2.1 3.6	3252.8
254	89/10/19	19d20-20d07 1930-2340 15-20 15 20d(16-18) 20d(17-18)	MET. GOES BAL MET. NM NM MET. GOES BAL	5-100 200-500 433 2000 3000-6000 15-100 200-500	1.2 2.9 2.7 3.6 2.0 3.5	2927.2
255	89/10/22	22d20-23d07 2130 18 18	MET. GOES BAL NM NM	15-100 200-500 433-2000 2176-5372	1.6 3.3 3.0 4.9	5762.2
256	89/10/24	24d22-25d03 20-22 20	MET. GOES MET. BAL. NM NM	15-100 200-2000 2000-6000	1.4 2.2 3.7	3315.0
257	89/10/29	08-12	MET. GOES	10-600	1.5	52.0
258	89/11/09	05-09	MET. GOES	5-15	3.4	6.2
259	89/11/15	09-11 07-09	MET. GOES. BAL. MET. BAL. NM	5-200 300-900	1.2 2.7	65.2

1	2	3	4	5	6	7
260	89/11/20	05-08	GOES	10-50	3.5	1.6
261	89/11/26	28d(12-13)	MET. GOES	5-60	3.4	80.2
262	89/11/30	1d(01-15)	MET. GOES	10-100	3.8	4434.0
263	90/02/03	03-04	MET	5-30	2.8	25.9
		05-08	GOES	10-50	1.78	0.8
264	90/03/19	19d(17-20)d01	MET. GOES	10-60	3.6	602.0
265	90/03/28	29d(10-12)	MET. GOES	10-50	3.1	5.6
266	90/04/06	8d(00-15)	MET. GOES	5-30	3.0	9.9
267	90/04/11	12d(05-06)	GOES	10-30	2.4	6.3
		12d(04-06)	MET	5-15	6.2	0.85
268	90/04/15	17d(11-13)	MET. GOES	5-60	2.7	11.3
269	90/04/28	28d(18-20)	MET. GOES	5-60	2.7	77.3
270	90/05/07	8d(00-02)	MET. GOES	5-60	2.0	7.2
271	90/05/21	08	MET. GOES	5-100	1.5	472.1
		21d23-22d07	MET. BAL. NM	90-1300	2.1	
		21d23-		1630-6100	3.0	
272	90/05/24	24d21-25d03	MET. GOES	5-100	1.4	326.1
		25d(06-07)*	BAL	100-400	1.8	
		2115-2120	NM	433-8400	2.5	
273	90/05/26	27d(02-04)	MET. GOES	5-100	1.4	322.4
		26d22-27d04	BAL. NM	200-2000	2.1	
		22	NM	2000-3000	2.9	
274	90/05/28	28d15-29d02	MET. GOES	5-100	1.5	119.9
		08-11	BAL. NM	150-3000	2.1	
275	90/06/12	12d(14-20)	MET. GOES	5-60	2.7	29.9
276	90/07/25	26d(04-10)	MET. GOES	5-100	1.8	11.9
277	90/07/30	1d(17-22)	MET. GOES	10-60	3.7	288.8
278	90/08/11	13d(15-17)	MET. GOES	5-30	3.2	1.99
279	90/10/23	23d(16-18)	MET. GOES	5-90	1.7	2.0
280	90/11/11	11d(07-12)	MET. GOES	5-50	1.7	0.97
281	90/12/23	23d(12-13)	MET. GOES	5-90	2.1	4.6
282	90/12/24	24d18-25d04	MET. GOES	5-90	1.7	2.8
283	91/01/25	26d(07-24)	MET	5-90	1.7	3.7
			GOES	30-100		
284	91/01/31	15-20	MET. GOES	5-60	3.6	130.1
285	91/02/08	11-12	MET. GOES	5-60	2.3	4.5
286	91/02/25	11-15	MET. GOES	5-60	2.3	6.0
287	91/03/12	13d(08-13)	MET. GOES	5-60	2.2	6.3
288	91/03/22	24d(04-06)	MET. GOES	10-40	1.9	50306.1
		24d(04-05)	MET. GOES. BAL.	50-150	4.7	
289	91/04/03	10-12	GOES	10-60	2.6	18.5
		4d(05-12)	MET. GOES	5-60	3.1	26.6
290	91/04/22	23d(01-04)	MET. GOES	5-50	2.3	3.3
291	91/05/13	04-11	MET. GOES	5-600	1.9	311.6
292	91/05/18	19d(04-08)	MET. GOES	5-50	2.2	7.6
293	91/05/22	22d12-23d05	MET	5-15	2.2	3.9
		20-22	GOES	30-60		

1	2	3	4	5	6	7
294	91/05/31	09-17	MET. GOES	5-50	3.4	7.1
		1d(01-06)	MET. GOES	5-50	2.9	14.0
295	91/06/02	19-23	MET. GOES	5-60	2.2	12.8
296	91/06/04	7d06-8d17	MET. GOES	5-100	1.8	323.4
		7d(17-22)	BAL	150-200	7.7	
297	91/06/11	04-09	MET. GOES. NM	5-1290	1.9	1236.4
		08-09	BAL	150-300	4.3	
		0345	NM	1290-2180	4.4	
		13-16	MET. GOES	5-600	2.3	7984.4
298	91/06/15	09-17	MET. GOES	5-100	1.4	1180.0
		16d(02-03)	BAL	100-200	4.5	
		0920	NM	433-1630	2.7	
		0920	NM	2000-3000	4.9	
299	91/06/29	30d13-1d01	MET. GOES	5-100	2.3	42.0
300	91/07/01	1d19-2d01	MET. GOES	5-100	2.7	115.1
301	91/07/07	8d(05-07)	MET. GOES	10-60	4.7	2062.4
		8d(15-18)	MET. GOES	10-60	4.5	1320
302	91/07/10	11d(05-07)	MET. GOES	5-50	3.5	19.0
303	91/08/03	3d06	MET	5-25	3.4	2.2
304	91/08/25	26d23-27d07	MET. GOES	5-60	3.1	20.3
		27d(17-21)	MET. GOES	5-60	3.3	140.6
305	91/09/30	11-21	MET. GOES	5-100	1.6	3.5
306	91/10/28	28d(14-17)	MET. GOES	5-30	3.8	11.1
307	91/10/30	09-13	MET. GOES	5-100	1.2	59.2
308	91/11/16	03-12	MET. GOES	5-100	1.2	1.4
309	91/11/17	10-14	MET. GOES	10-60	2.0	1.6
310	91/12/28	29d(07-10)	GOES	10-60	2.2	1.7
		29d0026*	MET	5-15	2.8	5
311	92/01/04	06-10	MET. GOES	5-50	1.9	1.3
312	92/02/07	11-12	MET. GOES	5-60	3.9	30.3
313	92/03/07	7d23-8d12	MET. GOES	5-100	1.1	8.6
314	92/03/15	10-15	MET. GOES	5-100	1.3	3.8
315	92/03/16	09-13	MET. GOES	5-100	1.9	8.7
316	92/04/20	21d(04-09)	MET. GOES	5-50	2.6	1.8
317	92/05/08	9d(12-23)	MET. GOES	5-100	4.3	4553.8
318	92/05/24	12-14	MET. GOES	5-50	2.3	2.6
319	92/06/25	25d23-26d09	MET. GOES	5-600	2.0	446.8
320	92/06/28	28d15-29d05	MET. GOES	5-100	2.5	26.1
321	92/10/06	08-14	MET	5-40	2.5	5.45
322	92/10/30	02-08	MET	15-40	2.8	13730.3
			GOES	30-60		
323	92/11/02	06-15	MET. GOES	5-100	1.3	1801.8
		0625-0735	BAL	200-500	3.7	
			NM	1000		
324	92/11/23	23d23-24d02	MET. GOES	5-60	2.2	2.6
325	92/11/29	11-15	MET. GOES	5-100	2.3	6.1
326	93/03/04	14-18	MET. GOES	5-100	1.5	15.8

1	2	3	4	5	6	7
327	93/03/06	7d(00-02)	MET. GOES	5-60	1.5	3.0
		7d(07-11)	MET. GOES	5-60	1.8	5.7
328	93/03/12	12d21-13d04	MET. GOES	5-100	1.4	38.1
329	93/05/14	15d(02-04)	MET. GOES	5-100	2.0	4.9
330	93/06/07	16-19	MET. GOES	5-60	1.8	6.5
331	93/09/25	06-09	MET	5-90	1.5	6.9
			GOES	30-100		
332	94/02/20	03-10	MET. GOES	5-100	2.3	54.4
		21d(07-11)	MET. GOES	10-60	5.7	6982.4
333	94/10/19	20d(00-06)	MET. GOES	5-100	2.4	40.6
334	95/10/20	08-15	MET. GOES	5-100	2.6	32.7

А. И. Сладкова, Г. А. Базилевская, В. Н. Ишков, М. Н. Назарова.
Н. К. Переяслова, А. Г. Ступишин, В. А. Ульянов, И. М. Черток

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тел. (095) 939-55-86