PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
OCTOBER 1958

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

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INTRODUCTION

This monthly report series is intended to keep research workers abreast of the major particulars of solar activity and the associated ionospheric, radio propagation and other geophysical effects. It is made possible through the cooperation of many observatories, laboratories and agencies as recorded in the detailed description of the tables and graphs which follows. The report is prepared in the Sun-Earth Relationships Section, edited by Miss J. V. Lincoln and Mr. Dale B. Bucknam.

I DAILY SOLAR INDICES

Relative Sunspot Numbers -- The table includes (1) the daily American relative sunspot numbers, R_A', as compiled by the Solar Division of the American Association of Variable Star Observers, and (2) the provisional daily Zürich relative sunspot numbers, R_Z, as communicated by the Swiss Federal Observatory. Because of the time required to collect and reduce the observations, R_A' will normally appear one month later than R_Z.

The relative sunspot number is an index of the activity of the entire visible disk. It is determined each day without reference to preceding days. Each isolated cluster of sunspots is termed a sunspot group and it may consist of one or a large number of distinct spots whose size can range from 10 or more square degrees of the solar surface down to the limit of resolution (e.g. 1/8 square degrees). The relative sunspot number is defined as $R=K(10g+s)$, where g is the number of sunspot groups and s is the total number of distinct spots. The scale factor K (usually less than unity) depends on the observer and is intended to effect the conversion to the scale originated by Wolf. The observations for sunspot numbers are made by a rather small group of extraordinarily faithful observers, many of them amateurs, each with many years of experience. The counts are made visually with small, suitably protected telescopes.

Final values of R_Z appear in the IAU Quarterly Bulletin on Solar Activity, the Journal of Geophysical Research and elsewhere. They usually differ slightly from the provisional values. The American numbers, R_A', are not revised.

Solar Flux Values, 2800 Mc -- The table also lists the daily values of solar flux at 2800 Mc recorded in watts/M^2/cycle/second bandwidth ($\times 10^{-22}$) in two polarizations by the National Research Council at Ottawa, Canada. These solar radio noise indices are being published in accordance with CCIR Report 25 that a basic solar index for ionospheric propagation should be measured objectively and "preferably refer to a property of the sun such as radiation flux which has direct physical relationship to the ionosphere."

Graph of Sunspot Cycle -- The graph illustrates the recent trend of Cycle 19 of the 11-year sunspot cycle and some predictions of the future level of activity. The customary "12-month" smoothed index, R, is used throughout, the data being final R_Z numbers except for the current year. Predictions shown are those made for one year after the latest available datum by the method of A. G. McNish and J. V. Lincoln (Trans. Am. Geophys. Union, 30, 673-685, 1949) modified by the use of regression coefficients and mean cycle values recomputed for Cycles 8 through 18. Cycle 19 began April 1954, when the minimum $\overline{R}$ of 3.4 was reached.

II SOLAR CENTERS OF ACTIVITY

Calcium Plage and Sunspot Regions -- The table gives particulars of the centers of activity visible on the solar disk during the preceding month. These are based on estimates made and reported on the day of observation and are therefore of limited reliability.

The table gives the heliographic coordinates of each center (taken as the calcium plage unless two or more significantly and individually active sunspot groups are included in an extended plage) in terms of the Greenwich date of passage of the sun's central meridian (CMP) and the latitude; the serial number of the plage as assigned by McMath-Hulbert Observatory; the serial number of the center in the previous solar rotation, if it is a persisting region; particulars of the plage at CMP: area, central intensity; a summary of the development of the plage during the current transit of the disk, where b = born on disk, ℓ = passed to or from invisible hemisphere, d = died on disk, and / = increasing, - = stable, \ = decreasing; and age in solar rotations; particulars of the associated sunspot group, if any, at CMP: area and spot count and the summary of development during the current disk transit, similar to the above. The unit of area is a millionth of the area of a solar hemisphere; the central intensity of calcium plages is roughly estimated on a scale of 1 = faint to 5 = very bright.

Calcium plage data are available through the cooperation of the McMath-Hulbert Observatory of the University of Michigan and the Mt. Wilson Observatory. The sunspot data are compiled from reports from the U. S. Naval Observatory, Mt. Wilson Observatory, and from reports from Europe and Japan received through the daily Ursigram messages.

Coronal Line Emission Indices -- In the table are summarized solar coronal emission intensity indices for the green (Fe XIV at λ5303) and red (Fe X at λ6374) coronal lines. The indices are based on measurements made at 5° intervals around the periphery of the solar disk by the High Altitude Observatory at Climax, Colorado, and by Harvard University observers at Sacramento Peak (The USAF Upper Air Research Observatory at Sunspot, New Mexico, under contract AF 19(604)-146). The measurements are expressed as the number of millionths of

an Angstrom of the continum of the center of the solar disk (at the same wavelength as the line) that would contain the same energy as the observed coronal line. The indices have the following meanings:

G_6 = mean of six highest line intensities in quadrant for λ5303.

R_6 = same for λ6374.

G_1 = highest value of intensity in quadrant, for λ5303.

R_1 = same for λ6374.

The dates given in the table correspond to the approximate time of CMP of the longitude zone represented by the indices. The actual observations were made for the North East and South East quadrants 7 days before; for the South West and North West quadrants 7 days after the CMP date given.

To obtain rough measures of the integrated emission of the entire solar disk in either of the lines, assuming the coronal changes to be small in a half solar rotation, it is satisfactory to perform the following type of summation given in example for 15 October:

$$\left(\begin{matrix}\text{MEAN DISK EMISSION} \\ \text{IN } \lambda 5303\end{matrix}\right)_{15\ \text{OCT}} = \frac{1}{N}\left[\sum_{15\ \text{OCT}}^{22\ \text{OCT}}\left\{(G_6)_{NE}+(G_6)_{SE}\right\}+\sum_{8\ \text{OCT}}^{14\ \text{OCT}}\left\{(G_6)_{SW}+(G_6)_{NW}\right\}\right]$$

where N is the number of indices entering the summation.

Such integrated disk indices as well as integrated whole-sun indices are computed for each day and are published quarterly in the "Solar Activity Summary" issued by the High Altitude Observatory at Boulder, Colorado. In the same reports are given maps of the intensity distribution of coronal emission derived from all available Climax and Sacramento Peak observations, as well as other information on solar activity, such as maps made from daily limb prominence surveys in Hα and notes regarding the history of active regions on the solar disk.

Preliminary summaries of solar activity, prepared on a fast schedule, are issued Friday of each week from High Altitude Observatory in conjunction with CRPL and include solar activity through the preceding day. These are useful to groups needing information on the current status of activity on the visible solar disk, but are not recommended for research uses unless such a prompt schedule of reporting is essential. The same information is included in the subsequent quarterly reports, with extensive additions, corrections and evaluations.

III SOLAR FLARES

Optical Observations -- The table presents the preliminary record of solar flares as reported to the CRPL on a rapid schedule at the sacrifice of detailed accuracy. Definitive and complete data are published later in the Quarterly Bulletin on Solar Activity, I.A.U.; in various observatory publications and elsewhere. The present listing serves to identify and roughly describe the phenomena observed.

Reporting directly to the CRPL are the following observatories: McMath-Hulbert, Wendelstein, Sacramento Peak, Mitaka and Swedish Astrophysical Station on Capri. The remainder report through the URSIgram centers or are available through the IGY World Data Center for Solar Activity in Boulder. Observations are in the light of the center of the H-alpha line unless noted otherwise. The reports from Sacramento Peak, New Mexico (communicated to CRPL by the High Altitude Observatory at Boulder) are from observations at the USAF Upper Air Research Observatory at Sunspot, New Mexico, by Harvard University observers, under contract AF 19(604)-146.

For each flare are listed the reporting observatory, the date, beginning and ending times, time of maximum phase, the heliographic coordinates in degrees, McMath serial number of the region, duration, the flare importance on the IAU scale of 1- to 3+, observing conditions where 1 means poor, 2 fair and 3 good, time of measurement for tabulated width of Hα or tabulated area, measured (i.e. projected) maximum area in square degrees, corrected maximum area in square degrees which equals measured area times secant h where h is the heliocentric angle, maximum effective line-width in Hα expressed in Angstroms, and maximum intensity of Hα expressed in per cent of the continuous spectrum. The following symbols are used in the table:

D = Greater than	F = Approximately
E = Less than	& = Plus

A final column lists provisionally the occurrence of simultaneous ionospheric effects as observed on selected field-strength recordings of distant high-frequency radio transmissions; a more nearly definitive list of these ionospheric effects, including particulars, appears in these reports after the lapse of a month (see below). All times are Universal Time (UT or GCT). Subflares (importance 1-) are listed by date, time of beginning and their heliographic coordinates. A graph presents intervals for which there were no patrols for flare observations from the observatories whose complete data are published in the table.

Ionospheric Effects -- SID (and GID--gradual ionospheric disturbances) may be detected in a number of ways: short wave fadeouts, enhancement of low frequency atmospherics, increases in cosmic absorption, and so forth. The table lists events that have been recognized on field-strength recordings of distant high-frequency radio transmissions.

Under a coordinated program, the staffs at the following ionospheric sounding stations contribute reports that are screened and synthesized at CRPL-Boulder: Puerto Rico, Ft. Belvoir, Va., and Anchorage, Alaska (CRPL Stations: PR, BE, AN); Huancayo, Peru (CRPL-Associated Laboratory: HU); and White Sands, N. Mex., Adak, Alaska, and Okinawa (U.S. Signal Corps Stations: WS, AD, OK). McMath-Hulbert Observatory (MC) also contributes such reports. In addition, reports are volunteered by RCA Communications Inc., Marconi Wireless, Netherlands Postal and Telecommunications Services, Swedish Telecommunications, and others; these usually specify times of SID and the radio paths involved.

In the coordinated program, the abnormal fades of field strength not obviously ascribable to other causes, are described as short wave fadeouts with the following further classification:

S-SWF:	sudden drop-out and gradual recovery
Slow S-SWF:	drop-out taking 5 to 15 minutes and gradual recovery
G-SWF:	gradual disturbance; fade irregular in either drop-out or recovery or both.

When there is agreement among the various reporting stations on the time (UT) of an event, it is accepted as a widespread phenomenon and listed in the table.

The degree of confidence in identifying the event, a subjective estimate, is reported by the stations and this is summarized in an index of certainty that the event is widespread, ranging from 1 (possible) to 5 (definite). The times given in the table for the event are from the report of a station (underlined in table) that identified it with high confidence. The criteria for the subjective importance rating assigned by each station on a scale of 1- to 3+ include amplitude of the fade, duration and confidence; greater consideration is given to reports on paths near the subsolar point in arriving at the summary importance rating given in the table.
Note: The tables of SID observed at Washington included in CRPL F-reports prior to F-135 were restricted to events classed here as S-SWF.

IV SOLAR RADIO WAVES

9530 Mc and 3200 Mc Observations

Data on solar radio emission made at the Naval Research Laboratory, Washington, D.C., by the Radio Astronomy Branch of the Atmosphere and Astrophysics Division on 9530 Mc (3.15 cm) and 3200 Mc (9.4 cm) are presented. Data received by 4-ft. and 6-ft. parabolic antennas installed on a common tracking mount--4-ft. for 3.15 cm and 6-ft. for 9.4 cm. Daily values of the solar flux are listed as recorded in watts/M^2/cycle/second bandwidth (X 10^{-22}) in two polarizations. Outstanding occurrences are measured from above the daily flux level and are given in a separate table in terms of the types developed by A. E. Covington for his recordings at 2800 Mc. In the

section headed 2800 Mc Observations these types are described. The column headed IAU designates the bursts according to the International Astronomical Union scheme. These are described as system (2) in the section headed 170 Mc and 450 Mc Observations.

2800 Mc Observations

The data on solar radio wave events made in Ottawa, Canada by the Radio and Electrical Engineering Division of the National Research Council (A. E. Covington) at 2800 Mc (10-cm emission) are presented. Near local noon (about 1700 UT) the sensitivity of the radiometer is determined and a mean flux for the whole day calculated. These values are given in a tabular form (see table I-1) in units of 10^{-22} watts/M^2/c/s. Burst phenomena are measured above this level and are given in terms especially suitable for the variations observed on this frequency. The basis for the classifications is described by Covington - J.R. Astro. Soc. Can. 45, 49, 1951 and Dodson, Hedeman and Covington, Ap. J. 119, 541, 1954. A modification in terminology with a view to simplification has been introduced and consists essentially of the omission of the descriptive word "Single" from the "Single-Simple" and "Single-Complex" classes; in designating the "Single", "Single-Simple" and "Rise and Fall" bursts into a single classification designated as "Simple Bursts" with an appropriate type number; in the addition of the letter "f" to indicate that the burst deviates from the basic pattern by the presence of one or more small fluctuations in intensity; and by the addition of the letter "A" to indicate that the event has another smaller duration event superimposed upon it.

Simple Burst

Any single burst which rises to one maximum and then decreases to the pre-burst level.

1 - Simple 1 -- Simple burst, type 1 (formerly "single"). Bursts of intensity less than 7 1/2 flux units and duration less than 7 1/2 minutes.

2 - Simple 2 -- Simple burst, type 2 (formerly "single-simple"). Bursts of impulsive nature with intensity greater than 7 1/2 flux units.

3 - Simple 3 -- Simple burst, type 3 (formerly "rise and fall"). Bursts of moderate intensity with duration greater than 7 1/2 minutes.

4 - Post-burst increase -- Postburst level is greater than the preburst level. The gradual return to normal flux may require as long as several hours.

5 - Absorption following burst (negative post).

6 - Complex -- (formerly "single-complex"). A single burst

which shows two or more comparable maxima before the activity has declined to zero.

7 - Period of irregular activity or fluxtuations -- Series of overlapping bursts of moderate intensity and duration.

8 - Group -- Series of single isolated bursts occurring in succession with intensity between the events equal to the level before and after the group.

9 - Precursor -- A small increase of intensity occurring before a larger increase.

Great Burst

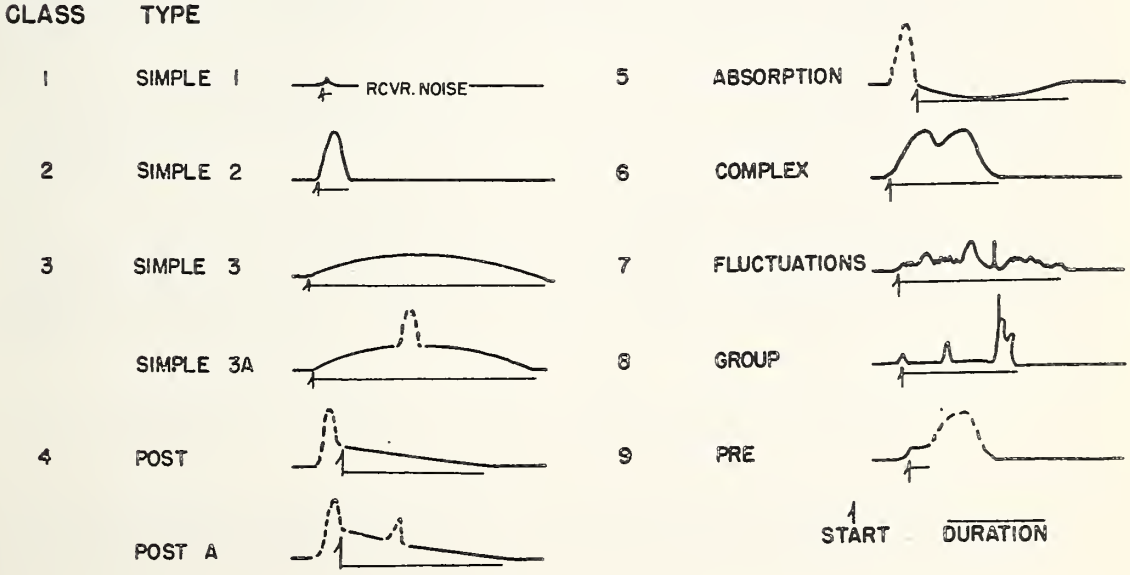
Infrequently occurring bursts of great intensity, often of complicated structure.

Letter "A"

Indicates that this event has another event superimposed upon it.

Letter "f"

Indicates that the basic form of the event is modified by secondary fluctuations.



200 Mc Observations

Data on solar radio waves made at Cornell University, Ithaca, N.Y. (Marshall Cohen) on 201.5 Mc are presented. All times are in Universal Time (UT or GCT). The antenna is linearly polarized and has a pattern appreciably broader than the solar disk. Flux is reported in units of 10^{-22} watts/m^2/cps and the tabulated numbers are twice the values observed in the one linear component.

Tables of flux and outstanding occurrences are given in general according to the systems used for the NBS 170 Mc and 450 Mc data.

170 Mc and 450 Mc Observations

Data on solar radio emission at the nominal frequencies of 170 Mc and 450 Mc recorded at the Gunbarrel Hill (Boulder) station of the National Bureau of Standards (R.S. Lawrence) are presented. The half width of the antenna lobe is appreciably greater than the solar disk. Polarization is not determined, but the dipole is oriented E-W. All times are in Universal Time (UT or GCT).

3-Hourly and Daily Flux Density and Variability -- Flux density is given in power units. These units are approximately 10^{-22} watts $meter^{-2}(c/s)^{-1}$ for both polarizations together. They will be subject to a correction factor when gain measurements of the antenna have been made. The median flux is measured for every one-hour period having at least thirty minutes of usable record and an applicable gain calibration. A three-hour value of flux is obtained by averaging the available one-hour medians (at least two required). A daily value of flux is obtained by averaging all available one-hour medians (at least four required). A dash indicates that insufficient measurements were made to meet the above requirements or that the records were not of usable quality. Flux values may be followed by the qualifying symbols D, S, and X defined subsequently.

The variability index, given for each three-hour interval, is on a scale 0 to 3 defined as follows:

0 - The instantaneous flux did not drop below one-half the median level or exceed twice the median level at any time.

1 - The instantaneous flux made from one to ten excursions

outside the range described above.

2 - The instantaneous flux made from ten to one hundred excursions outside the range described above.

3 - The instantaneous flux made more than one hundred excursions outside the range described above.

For the purpose of the variability index, an excursion whose maximum intensity is M times the median level is counted as M excursions. The variability index is omitted if measurements were made for less than one hour during the period. The variability for the day is the mean of the three-hourly values. The letter S follows variability indices which are in doubt because of atmospherics or local interference.

The observing periods are given in U. T. to the nearest 1/10 hour and they usually extend into the next Greenwich day.

Outstanding Occurrences -- A separate table lists the occurrences which are not adequately described by the three-hourly values of flux density and variability. Two classifications are given: (1) A system in general accord with that described and illustrated by Dodson, Hedeman, and Owren (Ap. J. 118, 169, 1953) and (2) the system described in the IGY Solar Activity Instruction Manual, prepared by the Radio Emission editor of the I.A.U. Quarterly Bulletin on Solar Activity.

In system (1) the occurrences are identified by numbers which do not necessarily indicate the magnitude of the event, as follows:

0 - Rise in base level -- A temporary increase in the continuum with duration of the order of tens of minutes to an hour.

1 - Series of bursts -- Bursts or groups of bursts, occurring intermittently over an interval of time of the order of minutes or hours. Such series of bursts are assigned as distinctive events only when they occur on a smooth record or show as a distinct change in the activity.

2 - Groups of bursts -- A cluster of bursts occurring in an interval of time of the order of minutes.

3 - Minor burst -- A burst of moderate or small amplitude, and duration of the order of one or two minutes.

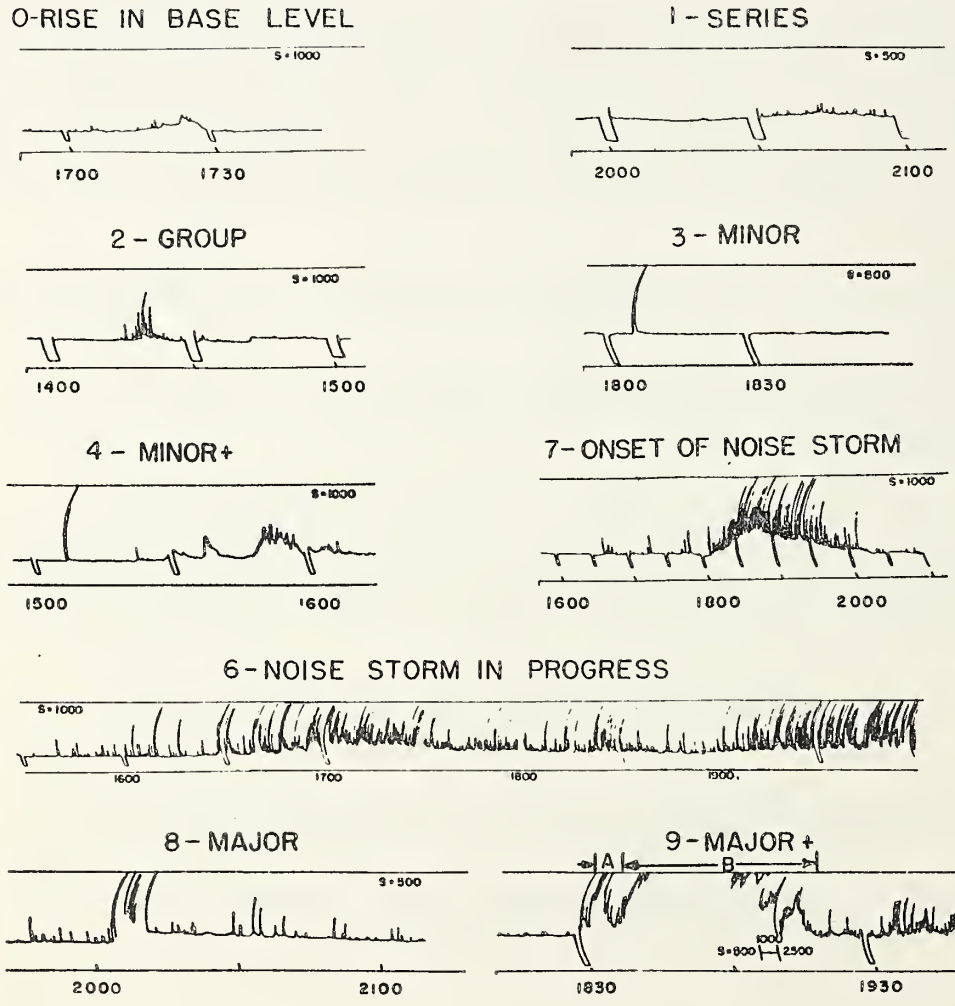
4 - Minor burst and second part -- A double rise in flux in which the early rise is a minor burst.

6 - Noise storm -- A temporary increase in radiation characterized by numerous closely spaced bursts, by an increase in the continuum, or by both. Duration is of the order of hours or days.

7 - Noise storm begins -- The onset of a noise storm occurs at some time during the observing period.

8 - Major burst -- An outburst, or other burst of large amplitude and more than average duration. A major burst is usually complex, with a duration of the order of one to ten minutes.

9A, 9B, or 9 - Major burst and second part or large event without distinct first and second parts -- If there is a double rise in flux, the first part, a major burst, is listed as 9A and the second part as 9B. The second part may consist of a rise in base level, a group or series of bursts, a noise storm. A major increase in flux with duration greater than ten minutes but without distinct first and second parts, is listed simply as 9.



In system (2) combinations of the following letters are used to describe some distinctive characteristics of the recorded disturbances:

S = simple rise and fall of intensity,
C = complex variation of intensity,
A = appears to be part of general activity,
D = distinct from (i.e. apparently superimposed upon) the general background,
M = multiple peaks separated by relatively long periods of quietness,
F = multiple peaks separated by relatively short periods of quietness,
E = sudden commencement or rise of activity.

Starting and maximum times are read to the nearest 1/10 minute if they are very definite and otherwise to the nearest minute. If the duration is less than five minutes, it is given to the nearest 1/10 minute; otherwise to the nearest minute (see also qualifying symbols below).

Maximum flux densities are given in units of 10^{-22} watts meter^{-2}(c/s)$^{-1}$. The instantaneous maximum flux density is the highest peak in the disturbance measured above the sky level. The smoothed maximum flux density is the maximum value of a smooth curve drawn through the outstanding occurrence with a smoothing period of 20 to 50 percent of the total duration; it is measured above the estimated level in the absence of the disturbance. The intention is that (smoothed maximum) x (duration) should give a measure of the energy radiated in the disturbance.

A dash indicates missing or insignificant data. Observations are interrupted during the period from 26 to 29 minutes after each hour for calibrations. Observing periods are given in the Daily Data tables. The following qualifying symbols are used:

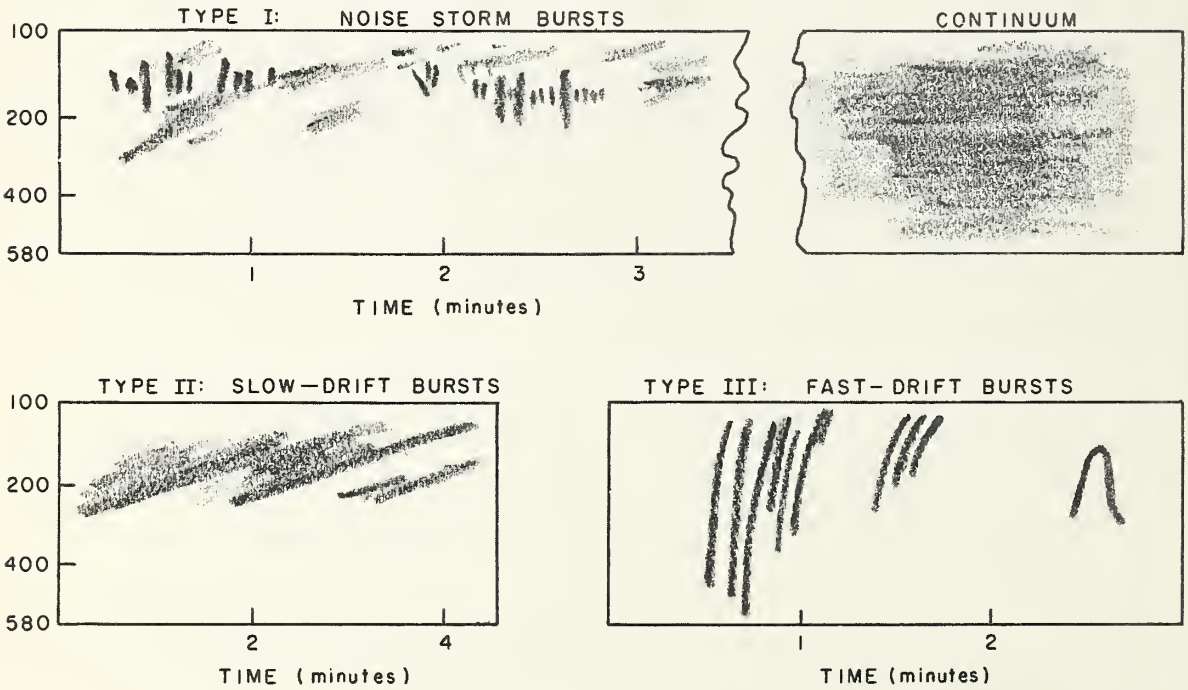
B - Event in progress before observations began.
D - Greater than.
I - Event apparently continued during an interruption of the observations. The period of the interruption may be given in the remarks.
N - See footnotes.
X - Measurement is uncertain or doubtful.
S - Measurement may be influenced by interference or atmospherics.

Spectrum Observations

Data on solar radio emission in the spectral range 100-580 Mc recorded at the Harvard University Radio Astronomy Station, Fort Davis, Texas (A. Maxwell) are presented. The research is sponsored by the Geophysics Research Directorate of the Air Force Cambridge Research Center, Air Research and Development Command, under contract AF19(604)-1394.

The receiving equipment consists of three separate sweep-frequency receivers covering the bands 100-180, 170-320, 300-580 Mc. These are attached to separate broad-band feeds mounted coaxially at the primary focus of an 8.55 meter diameter paraboloid, the 160-320 Mc feed being cross-polarized with the other two feeds. The effective collecting area of the antenna is 40 sq. meters at 100 Mc and 45 sq. meters at 500 Mc.

The four types of recognized spectral activity are idealized below:



Type IV continuum radiation is a steady enhancement of the background level over a wide band of the spectrum. In one form it is frequently associated with noise storms. A second form is characterized by the following properties:

(1) It is uniformly distributed over a band of frequencies often as wide as 300 Mc. The whole band may drift systematically toward higher or lower frequencies.

(2) Its intensity is essentially non-fluctuating.
(3) It is usually of high intensity, i.e., greater than 10^{-20} watts meter^{-2}(c/s)$^{-1}$.
(4) It often occurs at frequencies higher than the spectral range of noise storms, the upper limit of which rarely exceeds 250 Mc.
(5) After great radio outbursts it may last for as long as 5 hours. At the other extreme, a miniscule version, occurring after a group of fast drift bursts or an inverted U burst, may last only 10-60 seconds.

The large scale examples of this continuum are listed as "Cont. IV" in the tables. It probably corresponds to the "Type IV" radiation described by Boischot (Comptes Rendus 244, 1326, 1957) from fixed frequency observations taken at 169 Mc at Meudon, France. Photographic examples are published by Maxwell, Swarup and Thompson (Proc. IRE 46, 142, 1958). A few remaining solar radio bursts are tabulated as unclassified.

The symbols used in the tables are:

b = single burst
g = small group (<10) of bursts
G = large group ($\geq$10) of bursts
= Arrows indicate continuity of solar activity between two Greenwich days.

The minimum detectable level of solar activity is a function of frequency: approximately 5 x 10^{-22} watts meter^{-2}(c/s)$^{-1}$ at 100 Mc and 10^{-21} watts meter^{-2}(c/s)$^{-1}$ at 500 Mc. The equipment records signals over an intensity range of approximately 1000:1. There are three classes of intensity given in the tables. For 100 Mc they are:

1 = faint, 5 to 30 x 10^{-22} watts meter^{-2}(c/s)$^{-1}$

2 = moderate, 30 to 100 x 10^{-22}

3 = strong, >100 x 10^{-22}.

The times are Universal Time (UT). The accuracy is to the nearest half minute, except in the case of major outbursts which are specified to the nearest 0.1 minute.

V GEOMAGNETIC ACTIVITY INDICES

C, Kp, Ap, and Selected Quiet and Disturbed Days -- The data in the table are: (1) preliminary international character figures, C; (2) geomagnetic planetary three-hour range indices, Kp; (3) daily "equivalent amplitude," Ap; (4) magnetically selected quiet and disturbed days.

This table is made available by the Committee on Characterization of Magnetic Disturbance of IAGA, IUGG. The Meteorological Office, De Bilt, Holland collects the data from magnetic observatories distributed throughout the world, and compiles C and selected days. The Chairman of the Committee computes the planetary and equivalent amplitude indices. The same data are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe).

The C-figure is the arithmetic mean of the subjective classification by all observatories of each day's magnetic activity on a scale of 0 (quiet) to 2 (storm).

Kp is the mean standardized K-index from 12 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 (very quiet) to 9 (extremely disturbed), expressed in thirds of a unit, e.g. 5- is 4 2/3, 5o is 5 0/3, and 5+ is 5 1/3. This planetary index is designed to measure solar particle-radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field. A complete description of Kp has appeared in Bulletin 12b, "Geomagnetic Indices C and K, 1948" of the Association of Terrestrial Magnetism and Electricity (IATME), International Union of Geodesy and Geophysics.

Ap is a daily index of magnetic activity on a linear scale rather than on the quasi-logarithmic scale of the K-indices. It is the average of the eight values of an intermediate 3-hourly index "ap," defined as one-half the average gamma range of the most disturbed of the three force components, in the three-hour interval at standard stations; in practice, ap is computed from the Kp for the 3-hour interval. The extreme range of the scale of Ap is 0 to 400. The method is described in IATME Bulletin No. 12h (for 1953) p. viii f. Values of Ap (like Kp and Cp) have been published for the Polar Year 1932/33 and for the years 1937 onwards.

The magnetically quiet and disturbed days are selected in accordance with the general outline in Terr. Mag. (predecessor to J. Geophys. Res.) 48, pp 219-227, December 1943. The method in current use calls for ranking the days of a month by their geomagnetic activity as determined from the following three criteria with equal weight: (1) the sum of the eight Kp's; (2) the sum of the squares of the eight Kp's; and (3) the greatest Kp.

Chart of Kp by Solar Rotations -- The graph of Kp by solar rotations is furnished through the courtesy of Dr. J. Bartels, Geophysikalisches Institute, Göttingen.

VI RADIO PROPAGATION QUALITY INDICES

One can take as the definition of a radio propagation quality index: the measure of the efficiency of a medium-powered radio circuit operated under ideal conditions in all respects, except for the variable effect of the ionosphere on the propagation of the transmitted signal. The indices given here are derived from monitoring and circuit performance reports, and are the nearest practical approximation to the ideal index of propagation quality.

Quality indices are usually expressed on a scale that ranges from one to nine. Indices of four or less are generally taken to represent significant disturbance. (Note that for geomagnetic K-indices, disturbance is represented by higher numbers.) The adjectival equivalents of the integral quality indices are as follows:

1 = useless	4 = poor-to-fair	7 = good
2 = very poor	5 = fair	8 = very good
3 = poor	6 = fair-to-good	9 = excellent

CRPL forecasts are expressed on the same scale. The tables summarizing the outcome of forecasts include categories P-Perfect; S-Satisfactory; U-Unsatisfactory; F-Failure. The following conventions apply:

P - forecast quality equal to observed

S - forecast quality one grade different from observed

U - forecast quality two or more grades different from observed when <u>both</u> forecast and observed were > 5, or both < 5

F - other times when forecast quality two or more grades different from observed

Full discussion of the reliability of forecasts requires consideration of many factors besides the over-simplified summary given.

The quality figures represent a consensus of experience with radio propagation conditions. Since they are based entirely on monitoring or traffic reports, the reasons for low quality are not necessarily known and may not be limited to ionospheric storminess. For instance, low quality may result from improper frequency usage for the path and time of day. Although, wherever it is reported, frequency usage is included in the rating of reports, it must often

be an assumption that the reports refer to optimum working frequencies. It is more difficult to eliminate from the indices conditions of low quality for reasons such as multipath or interference. These considerations should be taken into account in interpreting research correlations between the Q-figures and solar, auroral, geomagnetic or similar indices.

North Atlantic Radio Path -- The CRPL quality figures, Qa, are compiled by the North Atlantic Radio Warning Service (NARWS), the CRPL forecasting center at Ft. Belvoir, Virginia, from radio traffic data for North Atlantic transmission paths closely approximating New York-to-London. These are reported to CRPL by the Canadian Defense Research Board, Canadian Broadcasting Corporation, and the following agencies of the U. S. Government:--Coast Guard, Navy, Army Signal Corps, U. S. Information Agency. Supplementing these data are CRPL monitoring, direction-finding observations and field-strength measurements of North Atlantic transmissions made at Belvoir.

The original reports are submitted on various scales and for various time intervals. The observations for each 6-hour interval are averaged on the original scale. These 6-hour indices are then adjusted to the 1 to 9 quality-figure scale by a conversion table prepared by comparing the distribution of these indices for at least four months, usually a year, with a master distribution determined from analysis of the reports originally made on the 1 to 9 quality-figure scale. A report whose distribution is the same as the master is thereby converted linearly to the Q-figure scale. The 6-hourly quality figure is the mean of the reports available for that period.

The 6-hourly quality figures are given in this table to the nearest one-third of a unit, e.g. 5o is 5 and 0/3; 5- is 4 and 2/3; 5+ is 5 and 1/3. Other data included are:

(a) Whole-day radio quality indices, which are weighted averages of the four 6-hourly indices, with half weight given to quality grades 5 and 6. This procedure tends to give whole-day indices suitable for comparison with whole-day advance forecasts which seek to designate the days of significant disturbance or unusually quiet conditions.

(b) Short-term forecasts, issued every six hours by the North Atlantic Radio Warning Service. These are issued one hour before 00^h, 06^h, 12^h, 18^h, UT and are applicable to the period 1 to 7 hours ahead.

(c) Advance forecasts, issued twice weekly by the NARWS (CRPL-J reports) and applicable 1 to 3 or 4 days ahead, 4 or 5 to 7 days ahead, and 8 to 25 days ahead. These forecasts are scored against the whole-day quality indices.

(d) Half-day averages of the geomagnetic K indices measured by the Fredericksburg Magnetic Observatory of the U. S. Coast and Geodetic Survey.

A chart compares the short-term forecasts with Qa-figures. A second chart compares the outcome of advance forecasts (1 to 3 or 4 days ahead) with a type of "blind" forecast. For the latter, the frequency for each quality grade, as determined from the distribution of quality grades in the four most recent months of the current season, is partitioned among the grades observed in the current month in proportion to the frequencies observed in the current month.

Ranges of useful frequencies on the North Atlantic radio path are shown in a series of diagrams, one for each day. The shaded area indicates the range of frequencies for which transmissions of quality 5 or greater were observed. The blacker the diagram, the quieter the day has been; a narrow strip indicates either high LUHF, low MUF, or both. These diagrams are based on data reported to CRPL by the German Post Office through the Fermeldetechnischen Zentralamtes, Darmstadt, Germany, being observations every one and a half hours of selected transmitters located in the eastern portion of North America. Since January 6, 1958 the transmitters monitored are restricted to those located north of 39° latitude. The magnetic activity index, A_{Fr}, from Fredericksburg, Va., is also given for each day.

Note: Beginning with data for September 1955, Qa has been determined from reports that are available within a few hours or at most within a few days, including for the first time, the CRPL observations. Therefore these are the indices by which the forecasters assess every day the conditions in the recent past. Over a period of several years, they have closely paralleled the former Qa indices which excluded CRPL observations and included three additional reports received after a considerable lag. Qa was first published to the nearest one-third of a unit at the same time.

North Pacific Radio Path -- The CRPL quality figures, Qp, are compiled by the North Pacific Radio Warning Service (NPRWS), the CRPL forecasting center at Anchorage, Alaska, from radio traffic data for moderately long transmission paths in the North Pacific equivalent to Seattle-to-Anchorage or Anchorage-to-Tokyo. These include reports to CRPL by the Alaska Communications System, Aeronautical Radio, Inc., U. S. Air Force and Civil Aeronautical Administration. In addition, there are CRPL monitoring, direction finder observations and field strength measurements of suitable transmissions.

The original reports are on various scales and for various time intervals. The observations for each 8 hours or 24 hour period are averaged on the original scale. This average is compared with reports for the same period in the preceding two months and expressed

as a deviation from the 3-month mean. The deviations are put on the 1 to 9 scale of quality which is assumed to have a standard deviation of 1.25 and a mean for the various periods as follows:

03-10 hours UT	5.33
11-18	5.33
19-02	6.00
00-24	5.67

The 8-hour and 24-hour indices Qp are determined separately. Each index is a weighted mean where the CRPL observations have unit weight and the others are weighted by the correlation coefficient with the CRPL observations.

The table, analagous to that for Qa, includes the 8-hourly quality figures; whole day quality figures; short-term forecasts issued by NPRWS three times daily at 02^h, 10^h, and 18^h UT, applicable to the stated 8-hour periods; advance forecasts issued twice weekly by NPRWS (CRPL-Jp report); and half-day averages of geomagnetic K indices from Sitka.

The chart compares the outcome of advance forecasts, on the same basis as the similar chart for the North Atlantic Radio Path.

Note: Beginning with November 1956 the short-term forecast formerly made at 0900 UT was changed to 1000 UT. The North Pacific quality figures used for evaluation are now 8-hourly rather than 9-hourly.

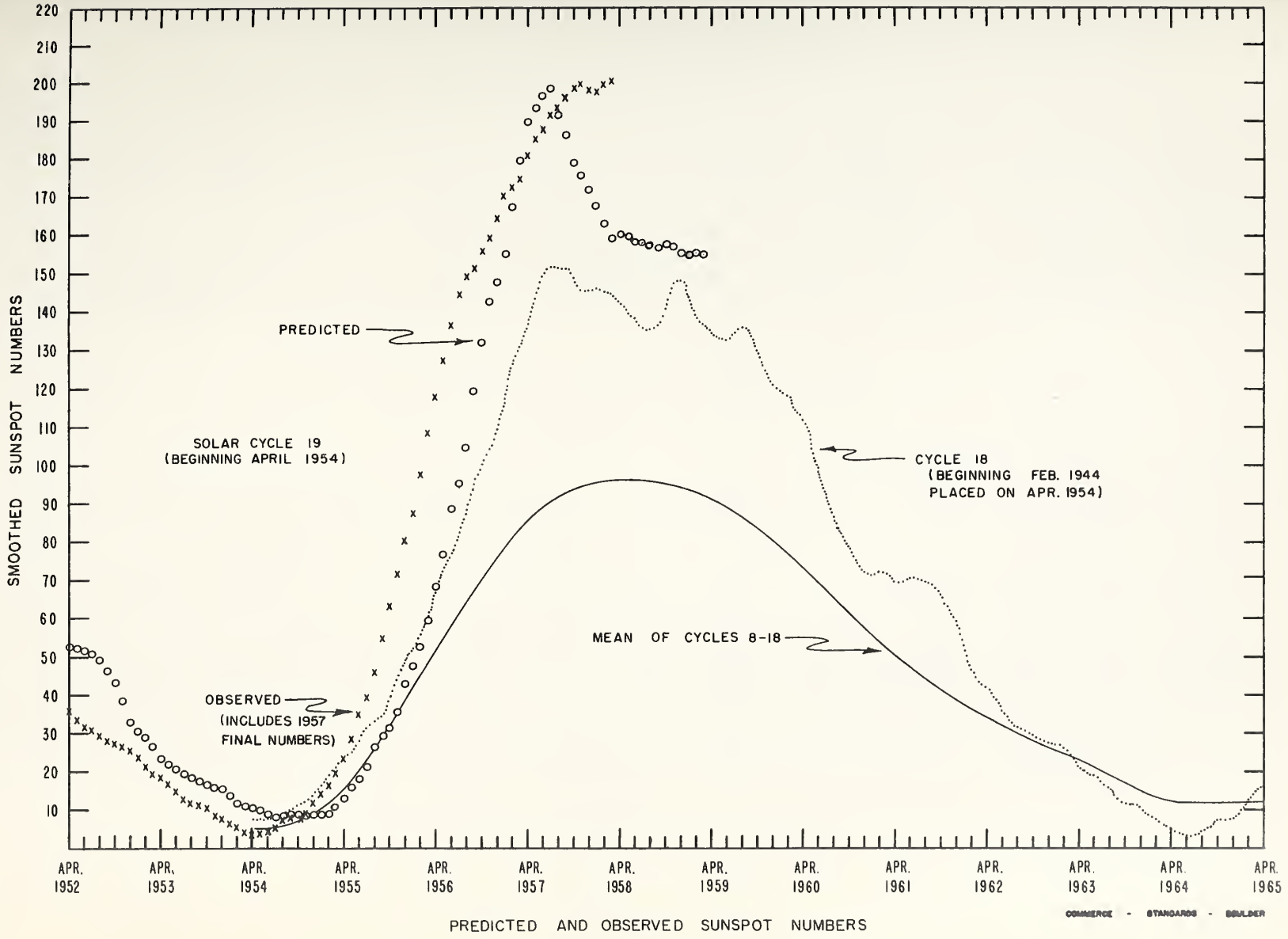
VII ALERT PERIODS AND SPECIAL WORLD INTERVALS

A table gives the Alert Periods and Special World Intervals (SWI) as designated by the IGY World Warning Agency at Ft. Belvoir, Va. For each day of the Alert or SWI are given the number of flares of importance two or greater reported promptly to the IGY World Warning Agency and the magnetic activity index A_{Be} observed at the IGY World Warning Agency.

DAILY SOLAR INDICES

Aug. 1958	American Relative Sunspot Numbers R_A'
1	240
2	240
3	216
4	178
5	217
6	238
7	235
8	211
9	235
10	240
11	192
12	189
13	180
14	155
15	191
16	198
17	177
18	149
19	136
20	142
21	161
22	174
23	190
24	185
25	195
26	161
27	175
28	184
29	166
30	193
31	209
Mean:	192.0

Sept. 1958	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	200	261
2	221	281
3	230	270
4	240	256
5	206	233
6	220	216
7	175	210
8	160	211
9	166	235
10	219	245
11	245	250
12	268	270
13	265	285
14	233	290
15	230	271
16	206	263
17	189	259
18	205	246
19	187	243
20	163	231
21	156	221
22	172	249
23	175	226
24	174	225
25	161	222
26	169	218
27	177	219
28	208	225
29	218	227
30	189	228
Mean:	200.9	242.9



PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS
SEPTEMBER 1958

CMP Sept. 1958	Lat	McMath Plage Number	Return of Region	Calcium Plage Data				Sunspot Data		
				CMP Values Area	Int.	History, Age		CMP Values Area	Count	History
01.8	N27	4726	4678	1400	3	ℓ / ℓ	3	210	8	ℓ ⌜ ℓ
01.8	S23	4734	4674	500	1	ℓ ∧ d	5	60	3	b ∧ d
02.3	N34	4735	4678	1000	3.5	ℓ — ℓ	3	190	8	b ⌜ ℓ
02.8	S10	4728	4690	400	1	ℓ \ d	2			
02.8	S09	4745	New	(1000)	(3.5)	b / ℓ	1	(120)	(3)	b ∧ d
02.9	S20	4730	New	800	2	ℓ ⌜ ℓ	1	60	1	ℓ ⌝ d
04.0	N19	4729	4680	3500	3	ℓ / ?	2	50	1	ℓ ⌝ d
04.1	N07	4742	New	200	3	b / ℓ	1	40	2	b ⌜⌝ d
04.2	S23	4732	New	500	2	ℓ ⌝ d	1			
05.2	N25	4733	4680	900	2.5	ℓ / ℓ	2			
05.2	S12	4737	4682	700	2.5	ℓ / ℓ	2	40	1	b ∧ d
05.4	N44	4736	New	1300	2	ℓ ∧ d	1			
05.6	N11	4738	New	1300	3.5	ℓ / ℓ	1			
07.3	N19	4753	New	(200)	(3)	b / ℓ	1	(20)	(2)	b ∧ d
07.9	N09	4740	4705	600	2.5	ℓ / ℓ	2	(50)	(4)	b ∧ d
08.0	S17	4739	*	13000	3.5	ℓ ⌜ ℓ	3,4	560	8	ℓ — ℓ
09.0	S08	4741	New	5000	2.5	ℓ — ℓ	1	530	20	ℓ — ℓ
09.7	N17	4743	New	5000	3	ℓ — ℓ	1	600	13	ℓ ⌜⌝ ℓ
10.6	N14	4746	New	1000	2	b — ℓ	1			
11.1	N10	4751	New	1000	2.5	b / ℓ	1	120	4	b ∧ d
12.0	S10	4749	New	1400	2	ℓ / ℓ	1	20	2	b ∧ d
12.0	N18	4761	New	300	2.5	b — d	1	50	3	b ∧ d
12.4	N35	4766	New	(300)	(2)	b / ℓ	1			
12.8	N23	4744	New	5000	4	ℓ — ℓ	1	470	16	ℓ ⌝ d
13.4	N46	4747	New	(600)	(1.5)	b — d	1			
13.6	S22	4762	New	500	3	b / ℓ	1	50	2	b ∧ d
14.3	S12	4750	New	6000	3.5	ℓ ⌜⌝ ℓ	1	60	3	b ∧ ℓ
14.5	N15	4748	New	2000	3.5	ℓ ∧ ℓ	1	70	1	b ∧ d
14.5	N27	4754	4701	500	1.5	ℓ ⌝ d	2			
14.6	S33	4755	4714	5000	3.5	ℓ — ℓ	2	630	9	ℓ — ℓ
14.7	S24	4752	4703	3000	3	ℓ \ ℓ	6	20	1	ℓ ⌝ d
17.0	S12	4757	4710	1800	2.5	ℓ ∨ ℓ	4			
17.2	N30	4758	4704	500	3.5	ℓ — ℓ	2	20	2	ℓ ⌝ d
17.5	N18	4756	4708	9000	3	ℓ \ ℓ	2	380	6	ℓ — ℓ
18.0	S18	4759	4710	3200	3	ℓ \ ℓ	4	440	5	ℓ ⌞ ℓ
19.2	N20	4760	4711	1100	2.5	ℓ ∧ d	3	160	11	b ∧ d
20.1	N23	4764	4711	4000	3.5	ℓ ⌜ ℓ	3	150	22	ℓ — ℓ
20.1	S16	4765	4712	14000	3.5	ℓ ⌜ ℓ	4	1220	40	ℓ — ℓ
21.2	N24	4767	4716	800	1.5	ℓ ⌞ ℓ	6			
21.4	S23	4770	4712	700	1.5	ℓ ∧ d	4	40	1	b ∧ d
22.1	N29	4773	New	(300)	(1)	b ∧ d				
22.5	N12	4768	4715	5500	3	ℓ — ℓ	4	210	9	ℓ ⌝ d
23.9	N30	4777	New	500	3	b ⌜ ℓ	1	250	5	b ∧ d
24.8	S09	4779	New	900	3	b ⌜ ℓ	1			
25.3	N14	4785	New	500	4	b / ℓ	1	80	6	b ⌜ d
25.7	N28	4769	4719	3200	2.5	ℓ — ℓ	4			
27.0	S04	4771	**	5000	3.5	ℓ — ℓ	1,3	390	2	ℓ — ℓ
27.7	N16	4774	4725	2000	2.5	ℓ — ℓ	2	20	1	b ∧ d
27.7	N33	4775	4721	2500	2	ℓ \ d	5			
28.4	S15	4776	**	2000	3	ℓ / ℓ	1,3	650	10	ℓ — ℓ
28.8	N06	4795	New	(300)	(2)	b — ℓ	1			
29.1	N23	4780	+	2000	3.5	ℓ — ℓ	1,4	260	3	ℓ — ℓ
29.4	S22	4778	4730	1800	4	ℓ \ ℓ	2	230	11	ℓ ⌝ d
29.9	S10	4781	New	4000	4	ℓ ⌞ ℓ	1	580	12	ℓ — ℓ
30.0	N03	4796	New	200	2	b / ℓ	1	(440)	(6)	b ⌜ ℓ
30.4	N23	4783		1200	2	ℓ ⌝ d		(320)	(2)	b / ℓ
30.8	N08	4782		1600	3.5	ℓ — ℓ		340	3	ℓ ⌝ d

* 4684 and 4686.
** New and part of 4722.
\+ New and part of 4726.

CORONAL LINE EMISSION INDICES

SEPTEMBER 1958

CMP Sept 1958	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	181	251	47	102	113	136	59	103	x	x	x	x	x	x	x	x
2	133	189	24	32	150	209	26	32	x	x	x	x	x	x	x	x
3	175	220	88	108	121	138	87	126	116	181	x	x	193	240	x	x
4	154a	214a	x	x	107a	156a	x	x	x	x	x	x	x	x	x	x
5	121	142	x	x	75	108	x	x	93	125	x	x	113	128	x	x
6	92	121	x	x	109	136	x	x	86	102	x	x	92	128	x	x
7	72	91	30	46	120	196	37	62	89	139	29	51	82	119	27	42
8	112a	143a	35a	60a	181a	248a	59a	102a	163	197	37	74	153	200	60	102
9	110	192	29	50	134	176	62	172	96	151	29	89	102	152	73	174
10	x	x	x	x	x	x	x	x	86	140	23	51	111	148	75	124
11	x	x	x	x	x	x	x	x	98	141	24	36	93	110	46	84
12	x	x	x	x	x	x	x	x	95	136	39	62	120	168	49	96
13	169	296	36	63	125	148	26	36	189	284	64a	136a	188	300	81a	162a
14	134	180	32	52	167	224	69	145	124	225	30	42	111	136	35	54
15	105a	119a	x	x	195a	332a	x	x	118	138	x	x	85	112	x	x
16	140	176	x	x	164	220	x	x	132	178	x	x	119	172	x	x
17	119a	144a	x	x	170a	216a	x	x	201	276	60	120	165	280	34	48
18	x	x	x	x	x	x	x	x	60	87	27	50	96	156	27	42
19	105	174	x	x	156	254	x	x	77	103	35	58	100	152	52	102
20	155	223	x	x	113	162	x	x	x	x	x	x	x	x	x	x
21	94	141	28	42	62	76	33	48	x	x	x	x	x	x	x	x
22	127	187	21	25	74	88	21	30	57	78	15	18	210	282	42	90
23	79	127	23	30	73	89	16	24	46	86	17	40	87	112	35	66
24	85	99	23	40	66	87	12	18	86	134	17	43	209	250	33	64
25	99	128	21	30	68	93	12	30	x	x	17	42	143	175	80	114
26	118	147	33	54	78	96	32	83	93	127	15	30	123	142	42	54
27	201	248	85	180	142	212	42	66	125	216	x	x	143	184	x	x
28	95	158	48a	66a	110	171	40a	96a	x	x	x	x	x	x	x	x
29	126	180	x	x	135	168	x	x	162	192	64	78	130	184	52	78
30	130	196	37	60	135	180	55	84	98	119	39	84	139	160	59	106

x = no observations a = index computed from low weight data * = yellow line observed

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

SEPTEMBER 1958

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION			DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
	SEPT 1958															
WENDEL	01	1027	1102 D	1037	N12	W55	4715	35 D	1&				5.00			
UCCLE	01	1029	1042	1033	S12	E58	4737	13	1	3						
CAPRI-S	01	1032 E	1047 D		N08	E56	4738	15 D	1	1	1035	1.30	2.60			
UCCLE	01	1145	1157 D		N13	W90	4715	12 D	1	3						
CAPRI-S	01	1223 E	1338 D		S08	W18	4722	75 D	1	1	1300	3.00	3.10			
USNRL	01	1223	1414	1247	S06	W20	4722	111	1	2	1247	1.81	1.97	1.00	113	
WENDEL	01	1224	1235		S06	W16	4722	11	1				3.00			
WENDEL	01	1242 E	1345 D	1246	S09	W19	4722	63 D	2				9.00			
STOCKHOLM	01	1245 E			S06	W19	4722		1&			4.90	4.90			
HAWAII	01	1824	1846	1828	S12	E90	4741	22	1	2	1828	4.50				S-SWF
NIZAMIAH	02	0257	0305	0259	N14	W23	4725	8	1	3	0259	2.43	2.64	1.70		
UCCLE	02	0928	0944	0938	N19	W88	4715	16	1&	3	0938	2.20	4.40			
UCCLE	02	1023	1110	1049	S16	E85	4741	47	2	3	1049	6.80	12.00			
ONDREJOV	02	1040 E	1058		S18	E80	4741	18 D	1&	3	1041			5.60		
KANZELHOHE	02	1040 E	1115		S15	E76	4741	35 D	2&							
ONDREJOV	02	1221 E	1225		S09	W24	4722	4 D	1	1	1221			2.80		
ONDREJOV	02	1308 E	1324		S08	E85	4741	16 D	1	2	1310			2.20		Slow S-SWF
WENDEL	02	1335 E	1442 D		S14	E85	4741	67 D	1&				6.00			
MCMATH	02	1341	1426	1346	S16	E85	4741	45	1	2	1353	.98	3.90			
ONDREJOV	02	1343	1400	1345	S17	E78	4741	17	1&	3	1345			4.00		
WENDEL	02	1525 E	1637 D		S14	E83	4741	72 D	1&				5.00			
MCMATH	02	1539	1640 D	1605	N10	W30	4725	61 D	1	2	1605	2.11	2.43		60	
ZURICH	02	1545 E	1554		N15	E88	4743	9 D	1	3	1545		5.00			
MCMATH	02	1546	1616	1602	S16	E85	4741	30	1	2	1602	.89	3.57		56	
ONDREJOV	02	1557 E	1608		S13	E70	4741	11 D	1	3	1601			2.30		
OTTAWA	02	1632	1704	1641	S08	W34	4722	32	1	2	1641	1.62	2.06			S-SWF
MCMATH	02	1640	1716	1707	S16	E83	4741	36	1&	2	1707	1.46	5.85		58	
OTTAWA	02	1645	1725	1704	S14	E73	4741	40	1	2	1704	1.28	5.10			S-SWF
USNRL	02	1704	1813	1709	S15	E76	4741	69	1	2	1709	1.02	3.64	1.00	76	
CLIMAX	02	1707 E	1734	1709	S18	E80	4741	27 D	1		1709	2.30				
MCMATH	02	1743	1800 D	1748	N24	W28	4721	17 D	1	2	1748	2.36	2.71		61	
SAC PEAK	02	2000	2025	2005	N14	W29	4725	25	1	2		2.60			20	
CLIMAX	02	2002	2018	2011	N14	W30	4725	16	1		2011	2.50				
MCMATH	02	2015	2031	2026	S08	W88	4718	16	1	2	2026	.60	3.28		58	
HAWAII	02	2026 E	2034 D		S11	E90	4741	8 D	1	2	2026	2.50				
SAC PEAK	02	2102	2127 U	2105	S07	E80	4741	25	1&	2		2.80			35	
MCMATH	02	2102	2131	2105	S07	E85	4741	29	3	2	2105	2.44	14.03		102	S-SWF
HAWAII	02	2103	2126	2106	S11	E90	4741	23	1&	3	2106	4.10				
MITAKA	03	0109	0116		N15	E89	4743	7	1	1	0109	1.84		4.60		
UCCLE	03	0823 E			N17	E85	4743		1&	4		1.50	4.50			
UCCLE	03	0831	0843	0836	S08	E80	4741	12	1&	4	0836	1.70	4.20			
ARCETRI	03	0843 E			S09	E74	4741		1	3	0843	.80	3.40			
LOCARNO	03	0900	1145		S01	E90	4741	165	1	2	1000					
UCCLE	03	1006	1027		N17	E85	4743	21	1	4						
UCCLE	03	1051	1134		N34	W20	4735	43	1	4						
UCCLE	03	1108	1118		S05	W54	4722	10	1	3		2.00	2.20			
LOCARNO	03	1205	1222		S06	W52	4722	17	1	2	1205		.50			
UCCLE	03	1206	1216 D	1208	S04	W55	4722	10 D	1	3	1208	2.70	4.40			
WENDEL	03	1206	1224		S06	W52	4722	18	1				4.00			
ONDREJOV	03	1207 E	1220 D		S05	E69	4741	13 D	1&	3	1207			2.50		
ONDREJOV	03	1308 E	1321		S03	W48	4722	13 D	1	3	1311			2.10		

SOLAR FLARES

SEPTEMBER 1958

OBSERVATORY	DATE SEPT 1958	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEASUREMENTS MEAS. AREA Sq. Deg.	MEASUREMENTS CORR. AREA Sq. Deg.	MEASUREMENTS MAX. WIDTH Ha	MEASUREMENTS MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
SAC PEAK	03	1510	1600	1520	S02	W48	4722	50	1	2		3.20			15	
WENDEL	03	1514 E	1546		S03	W48	4722	32 D	1&				7.00			S-SWF
ONDREJOV	03	1521 E	1540		S05	W51	4722	19 D	1	3	1523			2.30		
SAC PEAK	03	1920	1930 D	1930 D	S07	E70	4741	10 D	1&	1		4.50			18	
HAWAII	03	1926	1954	1932	S09	E70	4741	28	1	3	1932	2.50	7.00			Slow S-SWF
USNRL	03	1934 E	2002 D		S07	E69	4741	28 D	1	2	1934	1.24	3.64		96	
USNRL	03	1942	2002 D	1945	N16	W42	4725	20 D	1	2	1945	1.36	1.84		117	
ONDREJOV	04	0528 E	0535		S06	E65	4741	7 D	1	3	0529			3.50		S-SWF
NIZAMIAH	04	0532 E	0541		S07	E58	4741	9 D	1	3	0532	2.43	4.86	1.50		
ONDREJOV	04	0600 E	0605		N12	W55	4725	5 D	1	3	0602			2.70		
ONDREJOV	04	0853	0900	0855	N19	E67	4743	7	1	3	0855			2.60		
ARCETRI	04	0945 E	1000 D		N16	E68	4743	15 D	1	3	0945	1.70	4.60			
ARCETRI	04	1021 E	1032 D		N16	E69	4743	11 D	2	3	1021	3.10	8.70			
MEUDON	04	1114	1200		N33	W55	4721	46	1				5.00			
ONDREJOV	04	1121	1144		N25	W50	4721	23	1&	3	1124			2.60		
WENDEL	04	1332 E	1349		S12	W51	4722	17 D	1				3.00			
USNRL	04	1401	1617	1419	S16	W52	4722	136	1&	2	1419	2.71	4.90	2.00	80	
CAPRI-S	04	1404	1523		S13	W55	4722	79	2	3	1426	5.00	9.50			
MEUDON	04	1407	1520		S15	W50	4722	73	1&				10.00			
WENDEL	04	*1407	1520 D		S14	W50	4722	73 D	2				10.00			
MCMATH	04	1426 E	1547 D		S13	W53	4722	81 D	1	1	1437	1.22	2.12			
MEUDON	04	1457	1505		N14	W60	4725	8	1				8.00			
MCMATH	04	1459	1505	1501	N11	W62	4725	6	1	1	1500	1.87	3.73		64	
ONDREJOV	04	1502 E	1504 D		N11	W62	4725	2 D	1	3	1503			3.80		
ONDREJOV	04	1540	1543	1540	N19	E64	4743	3	1	3	1540			2.10		
ONDREJOV	04	1559	1631		N07	W12	4742	32	1	3	1601			2.60		
USNRL	04	1959	2054 D	2005	S12	W45	4722	55 D	1&	2	2005	2.26	3.42	2.00	108	
HAWAII	04	2002	2036	2010	S10	W44	4722	34	2	3	2010	5.70	8.10			
SAC PEAK	04	2022 E	2037 D	2022 E	S11	W44	4722	15 D	1&	1		3.80			14	
ONDREJOV	05	0520 E	0542		S05	E48	4741	22 D	1	3	0526			2.30		S-SWF
ONDREJOV	05	0619	0636	0623	S03	E49	4741	17	2	3	0623			4.80		
CAPRI-S	05	0620 E	0637		S07	E45	4741	17 D	1	3	0629	2.50	3.50			
WENDEL	05	0652 E	0704 D		S11	E45	4741	12 D	1				3.00			
UCCLE	05	0750 E			N15	E60	4743		□	1						
ONDREJOV	05	0853 E	0856		S08	E44	4741	3 D	1	3	0854			2.90		
ONDREJOV	05	1359	1430	1304	S10	E54	4741	31	1&	3	1304			3.10		
CAPRI-S	05	1359	1434		S10	E52	4741	35	1	3	1424	2.50	4.20			
ZURICH	05	1400	1425		S11	E54	4741	25	1	3	1405		5.00			
WENDEL	05	1403 E	1432		S10	E49	4741	29 D	1&				7.00			
MEUDON	05	1517	1546 D		N36	W75	4721	29 D	1							
ZURICH	05	1528 E	1537		N35	W87	4721	9 D	1	3	1528		5.00			
LOCARNO	05	1632	1700 D		S09	W65	4722	28 D	1	2	1640		2.00			
CLIMAX	06	0018	0101	0024	S28	E41	4739	43	1		0024	2.20				
LOCARNO	06	0915	0932		S11	E90	4750	17	1	2	0920					
WENDEL	06	0949 E	1003 D		N13	W78	4725	14 D	1				4.00			
UCCLE	06	0955	1013	1000	N20	E88	4744	18	1&	2	1000	3.40	6.00			
LOCARNO	06	1020 E	1042		S07	W47	4745	22 D	1	2	1030		2.00			
ZURICH	06	1109	1120		S07	E29	4741	11	1	3	1109		3.00			
UCCLE	06	1111	1122 D	1113	S07	E30	4741	11 D	1	1	1113	2.20				
CAPRI-S	06	1316	1428		S04	E32	4741	72	1	3	1330	1.70	2.00			

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OBSERVATORY	DATE SEPT 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
USNRL	06	1318	1432	1323	S07	E28	4741	74	1	2	1323	1.24	1.47	1.00	100	
ONDREJOV	06	1320 E	1332		S06	E29	4741	12 D	1	3	1321			2.30		
LOCARNO	06	1325 E	1420		S06	E29	4741	55 D	1&	2	1400		4.00			
SAC PEAK	06	1331 E	1415	1331 E	S06	E27	4741	44 D	1	3		2.10			18	
WENDEL	06	1333 E	1424		S06	E26	4741	51 D	1&				6.00			
WENDEL	06	1444	1501 D		N25	E82	4744	17 D	1				3.00			
ONDREJOV	06	1501 E	1506		S11	W63	4745	5 D	1	3	1504			2.00		
WENDEL	06	1636 E	1700 D		N15	W88	4725	24 D	1&				6.00			
MITAKA	06	2350 E	2407		S06	E23	4741	17 D	1	1	2350	3.80	4.30	1.87	120	
MITAKA	07	0100 E	0131		S08	W56	4745	31 D	1	2	0118	.41	.73	2.42	85	
MITAKA	07	0142	0159		N28	W90	4721	17	1	2	0155	1.84		4.92		
MITAKA	07	0147 E	0159	0147	S08	E25	4741	12 D	1	2	0148	1.01	1.18	2.81	165	
MITAKA	07	0613	0618 D		N17	E33	4743	5 D	1	1	0614	1.86	2.38	1.48	85	S-SWF
MITAKA	07	0624 E	0626		S12	E87	4750	2 D	1	1	0624	.89				
MITAKA	07	0650 E	0659		S10	E17	4741	9 D	1	1	0651	.89	1.00	2.51	107	
WENDEL	07	0650 E	0700		S10	E18	4741	10 D	1				4.00			
ATHENS	07	0930 E	0937 D		S18	E08	4741	7 D	1	3		2.00	2.10			
CAPRI-S	07	0930 E	0947 D		S08	E12	4741	17	1	3	0933	1.80	2.00			
ONDREJOV	07	0934 E	0939		S08	E17	4741	5 D	1	3	0934			2.20		
WENDEL	07	0936 E	0941 D		S07	E17	4741	5 D	1&				6.00			
LOCARNO	07	0940 E	0950		S06	E16	4741	10 D	1	2	0940		2.00			
ZURICH	07	1028	1036		S07	E22	4741	8	1	3	1028		3.00			
WENDEL	07	1030	1038 D		S08	E20	4741	8 D	1				3.00			
ONDREJOV	07	1031 E	1035		S06	E21	4741	4 D	1	3	1031			2.20		
WENDEL	07	1124	1141 D		N22	E69	4744	17 D	1&				5.00			
UCCLE	07	1126 E	1147	1129	N19	E71	4744	21 D	1	3	1129	2.10	4.20			
ONDREJOV	07	1129	1137		N23	E69	4744	8	1	3	1130			2.00		
CLIMAX	07	1441	1511	1449	N18	E70	4744	30	2		1449	7.40				
USNRL	07	1441	1522	1450	N19	E70	4744	41	2&	3	1450	2.37	6.50	2.00	122	
CAPRI-S	07	1447	1515		N19	E73	4744	28	2	3	1445	3.00	7.80			S-SWF
WENDEL	07	1448 E	1514 D	1450	N20	E69	4744	26 D	3&				25.00			
ONDREJOV	07	1449	1500	1451	N18	E69	4744	11	1&	3	1451			6.30		
CAPRI-S	07	1504 E	1523		S16	E11	4741	19 D	1	3	1510	2.20	2.20			
USNRL	07	1504	1525	1507	S07	E15	4741	21	1	3	1507	.90	.97	2.00	119	
ONDREJOV	07	1505 E	1510 D		S06	E19	4741	5 D	1	3	1505			2.20		
WENDEL	07	1510 E	1514 D		S07	E16	4741	4 D	1&				5.00			
ONDREJOV	07	1533 E	1535 D		S16	E20	4741	2 D	1	3	1533			2.30		
ONDREJOV	07	1550 E	1554		N19	E41	4743	4 D	1	3	1550			2.00		
CLIMAX	07	1639	1726	1643	S33	E19	4739	47	2		1643	6.80				S-SWF
HAWAII	07	2138	2150	2140	N16	E69	4744	12	1	2	2140	2.30	5.30			Slow S-SWF
CLIMAX	07	2148 E	2224 D	2151	N18	E70	4744	36 D	1		2151	2.90				
HAWAII	08	0138	0148 D	0142	N23	E67	4744	10 D	1	1	0142	3.40	7.90			Slow S-SWF
LOCARNO	08	0924	0945		S17	E03	4741	21	1	2	0930		1.00			
WENDEL	08	0925	0942 D		S17	E04	4741	17 D	1				3.00			
UCCLE	08	0952	1003	0953	S17	E85	4752	11	1&	1	0953	3.40	6.00			S-SWF
UCCLE	08	1124	1130		S17	E83	4752	6	1	2		2.20	4.00			
UCCLE	08	1146	1148 D		S17	E83	4752	2 D	1	3		2.20	4.40			
STOCKHOLM	08	1151 E	1212 D		S08	E03	4741	21 D	1			1.90	1.90			
LOCARNO	08	1310	1345		S07	W00	4741	35	1	2	1320		3.00			
LOCARNO	08	1320	1335		S08	E72	4750	15	1&	2	1330					
USNRL	08	1322	1342	1325	S18	E72	4752	20	1	3	1325	1.02	3.64		79	

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					APPROX.		McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
	SEPT 1958	START	END	MAX. PHASE	LAT.	MER. DIST.										
LOCARNO	08	1337	1350		S14	W10	4741	13	1	2	1340		2.00			
LOCARNO	08	1435	1505		N22	E50	4744	30	1&	2	1500		3.00			
LOCARNO	08	1520	1600		N18	E51	4744	40	1	2	1530		2.00			
USNRL	08	1713	1843	1727	N25	E57	4744	30	1	3	1727	2.71	4.39	1.00	85	
SAC PEAK	08	1720 E	1732 D	1728 U	N24	E56	4744	12 D	1&	1		3.20			1&	
MCMATH	08	1724	1732	1727	N28	E60	4744	8	1	1	1727	1.95	3.41		57	
WENDEL	09	0937 E	0940 D		S08	W13	4741	3 D	1&				6.00			
WENDEL	09	1042 E	1117 D		N17	E02	4743	35 D	1				3.00			
LOCARNO	09	1045 E	1200		N17	E01	4743	75 D	1&	2	1130		3.00			
ONDREJOV	09	1051 E	1102		N16	E01	4743	11 D	1	3	1052			2.30		
ZURICH	09	1053 E	1115 D		N16	E04	4743	22 D	1	1	1053		3.00			
WENDEL	09	1137 E	1200 D		N17	E02	4743	23 D	1				4.00			
UCCLE	09	1149 E	1215		N16	E03	4743	26 D	2	2		6.00				
WENDEL	09	1145	1200 D		N18	E41	4744	15 D	1				3.00			
LOCARNO	09	1146	1202		N20	E40	4744	16	1	2	1200		2.00			
ONDREJOV	09	1147 E	1158		N19	E42	4744	11 D	1	2	1150			2.60		
UCCLE	09	1149 E	1154		N18	E42	4744	5 D	1	2		1.70	2.10			
UCCLE	09	1212			S07	W09	4741		1	2						
ONDREJOV	09	1212 E	1222		S09	W01	4741	10 D	1	3	1215			2.30		
LOCARNO	09	1212	1235		S07	W02	4741	23	1	2	1230		3.00			
UCCLE	09	1215			S09	W02	4741		1	2						
USNRL	09	1343	1530	1354	S17	W19	4739	107	1	2	1354	1.82	2.16	1.00	84	
USNRL	09			1408	S17	W19	4739	107	□		1408	3.28	3.92		88	
SAC PEAK	09	1345	1452	1407	S16	W19	4739	67	2	2		6.70			17	
LOCARNO	09	1345 E	1545		S06	W12	4739	120 D	2	2	1430		5.00			
CLIMAX	09	1401 E	1503		S16	W18	4739	62 D	2		1403	8.20				
WENDEL	09	1425 E	1510 D		S12	W17	4739	45 D	3&				48.00			
ONDREJOV	09	1513 E	1524		N19	E40	4744	11 D	1	3	1514			2.20		
HAWAII	09	2214	2227 D		S06	W23	4741	13 D	1&	2	2224	4.70	5.20			
SYDNEY	09	2350	0110	0010	S13	W10	4741	80	2							Slow S-SWF
HAWAII	10	0019 E	0044 D	0022	S14	W09	4739	25 D	2	2	0022	7.10	7.80			
ATHENS	10	0558 E	0607		N17	E29	4744	9	1	3		2.30	2.70			
MITAKA	10	0603 E	0606		N18	E30	4744	3 D	1	1	0603	2.78	3.34	3.23	143	
UCCLE	10	0906	0935	0910	S08	W25	4741	29	1&	3	0910	3.40				
UCCLE	10	1005	1038	1014	S08	W25	4741	33	1&	3	1014	3.40				
STOCKHOLM	10	1005 E	1042 D		S10	W27	4741	37 D	1&			4.00	4.00			S-SWF
LOCARNO	10	1010	1042		S07	W26	4741	32	1&	2	1030		2.00			
CAPRI-S	10	1013 E	1032 D		S07	W26	4741	19 D	1	2	1018	2.30	2.50			
MCMATH	10	1206	1228	1217	S30	E75	4755	22	2	2	1217	2.27	7.96		52	
SAC PEAK	10	1545	1705	1607	S31	E70	4755	80	1	2		2.90			15	
LOCARNO	10	1555 E	1700		S30	E62	4755	65 D	1	2	1600		4.00			
USNRL	10	1603	1731 D	1604	S32	E70	4755	88 D	1	1	1604	.56	2.32	1.00	72	G-SWF
USNRL	10			1654	S32	E70	4755	88 D	□		1654	.90	3.74		55	
MCMATH	10	1633 E	1655 D		S32	E70	4755	22 D	1	1	1633	1.06	3.54			
MITAKA	11	0511 E	0532	0517	S07	W39	4741	21 D	1&	1	0511	5.67	7.06	2.62	128	S-SWF
MITAKA	11	0533 E	0545 D		S08	W36	4741	12 D	1	1	0533	1.84	2.30	1.42	102	
MITAKA	11	0520 E	0546		N11	E47	4748	26 D	1&	1	0520	5.67	8.05	1.93	134	
MITAKA	11	0536	0550 D		S13	E87	4757	14 D	1	1	0547	1.84		2.04		
ZURICH	11	0824 E	0837 D		S07	W34	4741	13 D	1	2	0824		1.00			
ARCETRI	11	0844 E			N16	E80	4756		1	4	0844	.80	4.60			

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MEUDON	11	0914 E	0920		S08	W45	4741	6 D	1							
CAPRI-S	11	0914 E	0925 D		S08	W37	4741	11 D	1	1	0914	1.70	2.20			
ZURICH	11	*0914 E	0925		S07	W40	4741	11 D	1&	2	0914		3.00			
UCCLE	11	0929 E	1000		N21	W20	4743	31 D	1	2						
ZURICH	11	0933	0957		N20	W19	4743	24	1	2	0933		3.00			
ARCETRI	11	0930 E	0941 D		N12	E90	4756	11 D	1	3						
UCCLE	11	1008 E	1024		N10	W50	4740	16 D	1	2						
UCCLE	11	1031	1050	1031	S11	W38	4739	19	1	2						
LOCARNO	11	1213	1258		S07	W43	4741	45	1&	2	1230		5.00			
USNRL	11	1213	1329	1215	S08	W40	4741	76	1	2	1215	1.02	1.25		131	
MCMATH	11	1213	1338	1216	S08	W42	4741	85	1	1	1216	2.27	3.09		77	
CAPRI-S	11	1214 E	1324 D		S09	W39	4741	70 D	1	1	1240	3.00	3.90			
STOCKHOLM	11	1217 E	1246 D		S09	W40	4741	29 D	1&		1220	2.70	3.50			
STOCKHOLM	11	1215 E	1236 D		N22	W19	4743	21 D	1		1217	2.00	2.20			
LOCARNO	11	1225	1237		N21	W21	4743	12	1	2	1230		1.00			
MCMATH	11	1242	1300 D		S18	W37	4739	18 D	1	1	1250	2.43	3.53		64	
LOCARNO	11	1243	1303		S16	W34	4739	20	1	2	1300		1.00			
MCMATH	11	1315 E	1345		S34	E65	4755	30 D	2	1	1325	2.27	6.64		54	
USNRL	11	1319	1351	1323	S33	E62	4755	32	1	3	1323	1.13	3.32	1.00	70	
USNRL	11	1733 E	1757 D		S33	E62	4755	24 D	1	1	1737	1.02	2.94		65	Slow S-SWF
MCMATH	11	1740	1837	1808	S08	W42	4741	57	1	1	1811	1.71	2.39		79	
USNRL	11	1757 E	1920		S08	W40	4741	83 D	1	2	1816	1.24	1.69	2.00	118	
HAWAII	11	2038	2044	2040	S12	W47	4739	6	1	3	2040	2.40	4.00			
HAWAII	11	2324	2330 D	2326	N20	E16	4744	6 D	1	3	2326	2.90	3.20			
ATHENS	12	0658	0735	0700	S14	E64	4757	37	2&	3		5.30	12.30			
LOCARNO	12	0700	0735		S11	E64	4757	35	1	2	0730		4.00			S-SWF
CAPRI-S	12	0702 E	0730 D		S11	E68	4757	28 D	2&	1	0706	4.00	11.00			
SCHAUINS	12	0702 E	0738 D		S13	E67	4757	36 D	2							
UCCLE	12	0812 E	0854		S08	W54	4741	42 D	1	3		2.20				
CAPRI-S	12	0815 E	0946 D		S07	W54	4741	91 D	2	1	0929	4.00	6.80			
UCCLE	12	0815	0827		S16	W48	4739	12	1	3		2.20				
ONDREJOV	12	0831	0845 D		S05	W58	4741	14 D	1	2	0835			2.60		
UCCLE	12	0851	0900	0855	N20	E04	4744	9	1	3	0855	2.20				
LOCARNO	12	0900	0930		S07	W54	4741	30	1	2	0920		2.50			S-SWF
ZURICH	12	0903 E	0926		S08	W54	4741	23 D	1	2	0903		4.00			
R O HERST	12	0905	0945	0912	N17	E66	4756	40	1&	3	0912	1.20	2.90	5.60	120	
UCCLE	12	0907	0941	0912	N15	E70	4756	34	2	3	0912	4.50	6.00			
ONDREJOV	12	0908 E	0914 D		N16	E74	4756	6 D	1	2	0913			3.90		
NIZAMIAH	12	0908 E	0927 D	0914	N14	E49	4756	19 D	1	2	0914	1.82	2.77	2.30		
CAPRI-S	12	0908 E	0950 D		N16	E65	4756	42 D	3	1	0916	6.00	14.00			
STOCKHOLM	12	0910 E			N15	E61	4756		2		0912	4.10	9.00			
SCHAUINS	12	0919 E	0956		N16	E63	4756	37 D	2							
MEUDON	12	0922 E	0935		N15	E65	4756	13 D	1							
LOCARNO	12	0925 E	1000		N16	E64	4756	35 D	1&	2	0930		4.00			
ZURICH	12	0927	1003		N15	E63	4756	36	1&	2	0927		4.00			
UCCLE	12	0911	0925	0914	S09	W52	4741	14	1	2	0914	2.10				
LOCARNO	12	1036	1110		S35	E55	4755	34	1	2	1100		2.50			
WENDEL	12	1036 E	1122 D		S36	E58	4755	46 D	2				8.00			
CAPRI-S	12	1038	1120 D		S37	E61	4755	42 D	1&	1	1043	1.80	4.70			
UCCLE	12	1039	1106	1041	S36	E60	4755	27	1&	2	1041	3.40				
STOCKHOLM	12	1043 E	1112 D		S33	E55	4755	29 D	1		1048	1.40	3.70			
MCMATH	12	1335	1405	1341	S10	E28	4752	30	1	1	1341	2.76	3.31		61	

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OBSERVATORY	DATE SEPT 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
WENDEL	12	1343 E	1411 D		S09	E27	4752	28 D	1				3.00			
MCMATH	12	1430	1443	1436	S10	E28	4752	13	1	1	1436	2.11	2.53		65	
MCMATH	12	1547	1600 D	1551	S31	E51	4755	13 D	1	1	1551	1.30	2.60		60	
CAPRI-S	12	1548 E	1558 D		S34	E52	4755	10 D	2	1	1557	3.00	6.00			
MCMATH	12	1605	1630	1613	S31	E51	4755	25	1&	1	1613	2.76	5.52		60	S-SWF
WENDEL	12	1615 E	1618 D		S34	E49	4755	3 D	1&				7.00			
USNRL	12	1656	1856		S33	E55	4755	120	1	1	1711	.90	2.30		75	
MCMATH	12	1704	1835	1721	S33	E55	4755	91	2	1	1721	2.92	6.93		69	S-SWF
CLIMAX	12	1707	1742	1724	S35	E56	4755	35	1		1724	2.80				
MCMATH	12	1800	1821	1810	S17	E77	4759	21	1	1	1810	.97	3.41		59	
MITAKA	13	0017 E	0053		S08	W64	4741	36 D	1	1	0027	1.34	2.79	3.03	149	Slow S-SWF
MITAKA	13	0320	0338	0324	S29	E41	4755	18	1	1	0329	1.84	3.28	1.86	134	
NIZAMIAH	13	0328	0338	0332	S13	E41	4752	10	1	3	0332	2.13	3.60	1.80		
NIZAMIAH	13	0546 E	0551 D		S12	W61	4739	5 D	1&	2	0546	1.22	2.75	1.80		
ONDREJOV	13	0552 E	0602		S16	W64	4739	10 D	1	3	0554			2.70		
ONDREJOV	13	0606 E	0620		S20	E65	4759	14 D	1&	3	0607			2.90		
UCCLE	13	0835	0858	0838	S31	E39	4755	23	1&	4	0838	2.50	3.70			
WENDEL	13	0840 E	0910 D		S30	E39	4755	30 D	1				3.00			
UCCLE	13	0904	0942	0919	S06	W54	4741	38	2&	4	0919	7.00	11.00			
KANZELHOHE	13	0905	0950		S10	W55	4741	45	2							
ARCETRI	13	0910 E	0935 D		S10	W58	4741	25 D	1	4	0933	2.70	4.80			
ONDREJOV	13	0910	0948	0918	S10	W62	4741	38	2	3	0918			3.10		
WENDEL	13	0911	1050 D	0915	S10	W57	4741	99 D	3				24.00			
UCCLE	13	0912	0928	0919	S12	W52	4741	16	1	4	0919	3.00	4.50			
UCCLE	13	0913	0955	0919	S08	W60	4741	22	2&	4	0919	6.00	11.00			
ZURICH	13	0917 E	1000		S10	W57	4741	43 D	2	3	0917		10.00			
CAPRI-S	13	0917	1020 D		S12	W57	4741	63 D	2	1	0944	4.00	8.00			
SCHAUINS	13	0919 E	0942 D		S10	W61	4741	23 D	2							
UCCLE	13	0911	0915	0913	S33	E40	4755	4	1	4						
UCCLE	13	0923	1110 D	0959	S33	E40	4755	107 D	1	4						
UCCLE	13			1011	S33	E40	4755		2&	4	1011	5.00	7.50			
WENDEL	13	0958 E	1100 D		S28	E36	4755	62 D	2				9.00			
CAPRI-S	13	1005 E	1104 D		S33	E36	4755	59 D	1	1	1028	3.00	4.80			
ZURICH	13	1007	1040 D		S30	E37	4755	33 D	1&	3	1007		5.00			
ONDREJOV	13	1013 E	1059 D		S30	E33	4755	46 D	1&	2	1017			2.30		
UCCLE	13	0946	1009	0959	S13	E18	4750	23	1	4						
UCCLE	13	1116	1130		N21	W54	4743	14	1	4		3.00	4.00			
WENDEL	13	1132 E	1153 D		S13	W50	4739	21 D	1				3.00			
UCCLE	13	1135	1143	1137	N12	W82	4740	8	1	4						
WENDEL	13	1333	1400		S13	E48	4757	27	1				3.00			
MCMATH	13	1334	1400	1345	S13	E50	4757	26	1	1	1345	1.30	2.60		68	
ONDREJOV	13	1345 E	1353 D		S17	E51	4757	8 D	1	2	1347			2.10		
WENDEL	13	1348	1412 D		S10	W66	4741	24 D	1				4.00			
WENDEL	13	1426	1529 D		S08	W69	4741	63 D	1&				7.00			
ONDREJOV	13	1439 E	1453		S09	W76	4741	14 D	1	3	1440			3.00		G-SWF
CAPRI-S	13	1439 E	1528 D		S08	W62	4741	49 D	1	3	1513	1.20	4.00			
LOCARNO	13	1450 E	1620		S07	W69	4741	90 D	1	1	1600		2.00			
WENDEL	13	1444	1501 D		N13	E57	4756	17 D	1				4.00			
ONDREJOV	13	1448 E	1458		N13	E59	4756	10 D	1	3	1450			2.70		
WENDEL	13	1602 E	1612 D		S05	W77	4741	10 D	1				3.00			
MCMATH	13	1704 E	1740	1720	N13	E57	4756	36 D	1	2	1720	1.47	2.50		72	
MCMATH	13	1935	2030	1943	S16	E53	4759	55	1&	2	1943	2.44	4.00		76	

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MCMATH	13	2010	2050	2030	N17	E58	4756	40	1	2	2030	2.10	3.67		63	
MCMATH	13	2110	2130 D	2119	S17	E60	4759	20 D	1	1	2119	2.43	4.86		61	
MCMATH	13	2151	2215	2201	N27	W11	4744	24	1	1	2201	2.28	2.46		84	
HAWAII	13	2154	2216	2200	N29	W09	4744	22	1	2	2200	3.10	3.40			
MITAKA	14	0504	0512	0505	N17	E36	4756	8	1	1	0504	.89	1.11	2.44	134	
WENDEL	14	0720 E			S18	E65	4765		2				8.00			
WENDEL	14	0830	0937 D		S10	W71	4741	67 D	2				15.00			
ONDREJOV	14	0831 E	0843	0836	S11	W75	4741	12 D	2	3	0836			7.10		
CAPRI-S	14	0832 E	0853 D		S15	W78	4741	21 D	2b	3	0835	3.00	11.00			
KANZELHOHE	14	0832	0935		S10	W74	4741	63	3b							
SCHAUINS	14	0832 E	1022 D		S10	W75	4741	110 D	2							Slow S-SWF
CAPRI-S	14	0853 E	1002 D		S15	W85	4741	9 D	2b	3	0901	2.00	9.00			
ONDREJOV	14	0856 E	0951	0900	S09	W80	4741	55 D	2b	3	0900			8.00		
MEUDON	14	0858 E	0956		S10	W80	4741	58 D	1b							
LOCARNO	14	0900 E	1030		S07	W70	4741	90 D	2	2	1000		20.00			
WENDEL	14	1215 E	1228 D		S15	E65	4765	13 D	1				4.00			
ONDREJOV	14	1223 E	1228		S16	E68	4765	5 D	1	3	1224			2.90		
ONDREJOV	14	1331 E	1344		S19	E64	4765	13 D	1	3	1334			2.60		
WENDEL	14	1333	1358 D		S17	E63	4765	25 D	1				4.00			
MCMATH	14	1613	1700 D	1625	S11	W07	4750	47 D	1	2	1625	2.60	2.76		68	
WENDEL	14	1615 E	1635 D		S11	W04	4750	20 D	2				8.00			
SAC PEAK	14	2050	2142	2105	S10	W12	4750	52	1	2		2.40			14	
SAC PEAK	14	2320	2345 D	2332	N15	E31	4756	25 D	1b	2		4.30			22	
HAWAII	14	2324	2356	2330	N13	E30	4756	32	1	2	2330	3.30	3.80			S-SWF
CLIMAX	14	2325	2348 D	2335	N15	E31	4756	23 D	1		2335	2.50				
MITAKA	15	0355	0403		N21	W29	4744	8	1	1	0359	1.84	2.17	1.87	107	
MITAKA	15	0406	0431		S17	E53	4765	25	2	1	0426	7.63	12.60	2.22	120	
MITAKA	15	0538	0610	0559	S14	E58	4765	32	1	1	0602	1.34	2.62	1.65	149	
MITAKA	15	0555 E	0600		N14	E30	4756	5 D	1	1	0555	.89	1.06	1.30	107	
CAPRI-S	15	0624	0659 D		N15	E27	4756	35 D	1	3	0647	2.50	3.00			
MITAKA	15	0625	0658	0641	N16	E23	4756	33	2b	1	0643	11.50	13.00	1.65	192	
ONDREJOV	15	0626 E	0654		N14	E28	4756	28 D	1	3	0640			2.40		
LOCARNO	15	0630 E	0700		N17	E25	4756	30 D	1	2	0700		1.50			
WENDEL	15	0630 E	0701 D		N15	E27	4756	31 D	2				11.00			
WENDEL	15	0647 E	0650		S19	E56	4765	3 D	1				3.00			
MITAKA	15	0657	0706		S16	E55	4765	9	1	1	0700	.67	1.22	2.10	120	
WENDEL	15	0827 E	1036 D	0940	S18	E53	4765	129 D	2				12.00			
ZURICH	15	0832	0901		S17	E50	4765	29	1b	2	0832		5.00			S-SWF
UCCLE	15	0844 E			S21	E52	4765		1	2						
ONDREJOV	15	0937	1033	0957	S19	E51	4765	56	1b	3	0957			2.90		
CAPRI-S	15	0937 E	1044 D		S19	E50	4765	67 D	1	3	1022	3.00	4.80			S-SWF
ZURICH	15	1016 E	1040 D		S17	E49	4765	24 D	1b	2	1016		6.00			
WENDEL	15	1149	1209 D		S09	W48	4749	20 D	1				3.00			
LOCARNO	15	1150	1400 D		S09	W47	4749	130 D	1	2	1400		.50			
WENDEL	15	1208	1242 D		S12	W32	4750	34 D	1				3.00			
WENDEL	15	1219 E	1322 D		S20	E50	4765	63 D	1				4.00			
MCMATH	15	1318	1405	1320	S18	E56	4765	47	1	2	1320	2.11	4.22		63	
WENDEL	15	1330 E	1347 D		S18	E56	4765	17 D	1				3.00			
WENDEL	15	1340 E	1420 D		S09	W49	4749	40 D	1b				5.00			
SAC PEAK	15	1435	1505	1440	S19	E48	4765	30	1	2		3.50			18	
CLIMAX	15	*1435	1505	1443	S22	E50	4765	30	1		1443	4.00				

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OBSERVATORY	DATE SEPT 1958	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEASUREMENTS MEAS. AREA Sq. Deg.	MEASUREMENTS CORR. AREA Sq. Deg.	MEASUREMENTS MAX. WIDTH Hα	MEASUREMENTS MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
MCMATH	15	1435	1507	1440	S20	E50	4765	32	2	2	1440	3.40	5.94		75	Slow S-SWF
WENDEL	15	1436	1458		S19	E50	4765	22	2				11.00			
CAPRI-S	15	1438 E	1456 D		S21	E50	4765	18 D	1	3	1443	2.20	3.50			
ONDREJOV	15	1441 E	1458		S20	E46	4765	17 D	1	3	1443			3.20		
OTTAWA	15	1453 E	1506	1455	S19	E47	4765	13 D	1	2	1455	1.39	2.39			
WENDEL	15	1444 E	1503 D		S09	W50	4749	19 D	1&				5.00			
SAC PEAK	15	1510	1525	1517	S18	E51	4765	15	1	2		2.70			18	
WENDEL	15	1512 E	1522		S19	E53	4765	10 D	1				4.00			
CLIMAX	15	1512	1523	1518	S19	E52	4765	11	1		1518	2.50				
OTTAWA	15	*1512	1523	1517	S17	E51	4765	11	1&	3	1517	1.51	2.77			
ONDREJOV	15	1517 E	1521		S17	E50	4765	4 D	1	3	1517			2.90		
MCMATH	15	1612	1645 D		N22	E32	4760	33 D	2	2	1630	6.50	7.80			
WENDEL	15	1624 E	1634		S18	E48	4765	10 D	1				3.00			
SAC PEAK	15	1650	1800 U	1702	S20	E48	4765	70	2	2		8.30			28	
USNRL	15	1658	1800	1710	S21	E48	4765	68	1&	3	1710	2.82	4.85	2.00	118	S-SWF
MCMATH	15	1702 E	1750 D		S20	E48	4765	48 D	2&	1	1705	7.00	12.15		68	
OTTAWA	15	1707 E	1730 D	1710	S19	E46	4765	23 D	2&	4	1710	6.38	10.57			
USNRL	15	1933	2000	1941	S18	E47	4765	27	1	3	1941	1.13	1.85	1.00	109	
SAC PEAK	15	1957 D	2040 D	2020 E	S19	E44	4765	43 D	1	1		2.60			19	Slow S-SWF
HAWAII	15	2012 E	2036	2017	S23	E45	4765	24 D	1	2	2017	3.30	5.50			
HAWAII	15	2208	2220	2212	S23	E45	4765	12	1	2	2212	2.00	3.30			
ONDREJOV	16	0608	0626	0615	N15	E15	4756	18	1	3	0615			2.40		
WENDEL	16	0732	0814 D		S16	E43	4765	42 D	2				10.00			
ATHENS	16	0734	0753		S15	E43	4765	19	1	3		2.70	3.90			
ONDREJOV	16	0744	0749		S16	E41	4765	5	1	3	0745			2.60		
ONDREJOV	16	1057	1153		N22	E47	4764	56	1&	3	1117			3.30		
CAPRI-S	16	1100	1202		N23	E50	4764	62	1	3	1105	3.00	4.50			
UCCLE	16	1103 E	1108 D	1103	N22	E51	4764	5 D	1&	2	1103	4.50				
WENDEL	16	1116 E	1210		N23	E52	4764	54 D	2&				15.00			
ONDREJOV	16	1312 E	1328 D		S17	E34	4765	16 D	1	2	1313			2.40		
CLIMAX	16	1443	1547	1458	S26	E38	4765	64	2		1458	5.80				
WENDEL	16	1444	1527 D		S24	E40	4765	43 D	3				24.00			Slow S-SWF
SAC PEAK	16	1445	1545	1507	S23	E36	4765	60	2	2		10.40			25	
USNRL	16	1446	1624	1504	S23	E33	4765	98	1&	1	1504	2.60	3.64	2.00	114	
CAPRI-S	16	1447	1542		S19	E37	4765	55	2	1	1506	5.50	8.00			
SAC PEAK	16	2227	2320	2255	S19	E40	4765	53	1	1		2.10			17	
CLIMAX	16	2248	2323	2257	S18	E40	4765	35	1		2257	2.30				
HAWAII	16	2250	2312	2256	S22	E38	4765	22	1	2	2256	2.80	3.90			
CAPRI-S	17	0837	1252		S18	E35	4765	255	2	2	1155	8.00	11.20			
ARCETRI	17	0932 E	0954 D		S19	E30	4765	22 D	2	3	0932	3.90	5.30			
ONDREJOV	17	1121	1125 D		S19	E39	4765	4 D	1&	2	1128			2.30		
ONDREJOV	17	1132 E	1133 D		S18	E27	4765	1 D	1	1	1132			2.40		
USNRL	17	1218 E	1401		S17	E37	4765	103 D	2	1	1224	4.86	6.80		84	
UCCLE	17	1458 E	1509 D		S17	E36	4765	11 D	1	2		5.00				
CAPRI-S	17	1525 E	1600 D		S22	E26	4765	35 D	1	3	1550	1.80	2.00			G-SWF
USNRL	17	1928	1958	1930	N17	W04	4756	30	1	2	1930	1.02	1.03	1.00	103	
CLIMAX	17	1939	2005	1947	S10	W43	4750	26	1		1947	2.40				
USNRL	17	1940	2013 D	1944	S10	W45	4750	33 D	1&	2	1944	1.81	2.74	1.00	111	
CLIMAX	17	2135	2242	2148	N24	E37	4764	67	1		2148	2.60				
SAC PEAK	17	2142	2205	2150	N23	E33	4764	23	1	1		3.10			17	
NIZAMIAH	18	0350	0444	0412	S15	E11	4765	54	2	3	0412	5.47	6.05	2.40		S-SWF

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OBSERVATORY	DATE SEPT 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
MITAKA	18	0354 E	0544	0415	S13	E14	4765	110 D	1&	1	0356	4.23	4.61	2.33	165	
CAPRI-S	18	0730	0938		S10	W48	4750	128	3	3	0832	7.00	12.60			
ATHENS	18	0804	0846 D		S10	W55	4750	42 D	2	3		3.80	6.60			
R O HERST	18	0812 E	0830 D	0817	S11	W55	4750	18 D	1	1	0817	1.20	2.40			
LOCARNO	18	0820 E	0920		S08	W43	4750	60 D	2	2	0900		12.00			
CAPRI-S	18	1015 E	1045 D		S33	W18	4755	30 D	1	3	1023	1.80	2.50			
SAC PEAK	18	1455	1520	1500	N23	E20	4764	25	1	2		2.60			17	
CAPRI-S	18	1459 E	1526 D		N23	E24	4764	27 D	1	2	1501	2.50	3.00			
USNRL	18	1500 E	1610		N23	E20	4764	70 D	1	1	1500	1.02	1.11	1.00	102	
UCCLE	18	1503 E	1529	1505	N22	E20	4764	26 D	1	1	1505	2.20				
SAC PEAK	18	1647	1735	1705	S16	E08	4765	48	1&	2		4.50			17	Slow S-SWF
USNRL	18	1657	1717	1703	S15	E11	4765	20	1	3	1703	1.02	1.11		108	
USNRL	18	1850	1917		S15	E11	4765	27	1	2	1851	1.02	1.12		143	
MITAKA	19	0115 E	0123		S21	E05	4765	8 D	1&	2	0116	2.31	2.63	2.35	217	
WENDEL	19	0744	0753	0746	N15	W38	4756	9	1&				6.00			
CAPRI-S	19	0744	0833		N16	W26	4756	49	1	3	0825	4.00	5.00			
UCCLE	19	0812	0830		N15	W28	4756	18	1	3		3.00	3.30			
ARCETRI	19	0824 E	0836 D		N11	W21	4756	12 D	1	4	0824	2.80	3.10			
CAPRI-S	19	1106 E	1122 D		S20	E06	4765	16 D	1	3	1109	2.00	2.10			
MCMATH	19	1335	1410	1350	N21	E09	4764	35	1	1	1350	2.27	2.41			
WENDEL	19	1339 E	1403 D		S23	E03	4765	24 D	1&				6.00			
WENDEL	19	1405	1412 D		S15	E04	4765	7 D	1				3.00			
CLIMAX	19	1542	1608	1556	N18	W28	4756	26	1		1556	3.10				
WENDEL	19	1545	1615 D		N14	W26	4756	30 D	1&				6.00			
SAC PEAK	19	1545	1625	1552	N16	W27	4756	40	1	2		2.10			17	
USNRL	19	1546	1628	1554	N16	W27	4756	42	1	2	1554	1.70	1.91	1.00	106	
CAPRI-S	19	1547	1610 D		N17	W28	4756	23 D	1	3	1600	3.00	3.60			
WENDEL	19	1550 E	1619 D		S15	E03	4765	29 D	1&				5.00			
CLIMAX	19	1556	1618	1606	S17	W03	4765	22	1		1606	3.30				
USNRL	19	1559	1627	1601	S16	W04	4765	28	1	2	1601	.90	.99		124	
MITAKA	20	0136 E	0157 D		N12	E35	4768	21 D	1	1	0153	1.84	2.32	1.48	115	
MITAKA	20	0242 E	0303	0242	S22	W09	4765	21 D	2	1	0242	9.43	10.80	2.51	183	Slow S-SWF
WENDEL	20	0718 E	0754		N13	E36	4768	36 D	1				4.00			
WENDEL	20	0728	0802 D		S16	W07	4765	34 D	1				3.00			
WENDEL	20	0949	1003 D		S15	W08	4765	14 D	1&				5.00			
UCCLE	20	1040	1047	1043	S16	W11	4765	7	1&	2	1043	3.40				
UCCLE	20	1129	1136	1131	N15	W50	4756	7	1	3	1131	2.20				
WENDEL	20	1533	1542 D		S15	W20	4765	9 D	1				3.00			
ONDREJOV	20	1536 E	1542 D		S16	W19	4765	6 D	1	2	1537			2.20		
WENDEL	20	1604 E	1618 D		N13	E30	4768	14 D	1				3.00			
MCMATH	20	1911	1930 D	1917	N22	W05	4764	19 D	1&	1	1918	3.90	4.08			
SAC PEAK	20	2025	2100	2037	S17	W14	4765	35	1	2		3.50			15	
MCMATH	20	2032 E	2100 D		S17	W20	4765	28 D	1	1	2039	2.76	3.18			
MITAKA	21	0100 E	0106		N20	W15	4764	6 D	1	1	0100	1.34	1.42	1.24	87	
MITAKA	21	0108 E	0112		N16	W46	4756	4 D	1	1	0108	.89	1.42	1.08	91	
MITAKA	21	0130 E	0135		S06	E85	4771	5 D	1	1	0133	2.31		1.46	89	
CAPRI-S	21	1029	1102		N21	W19	4764	33	1	3	1046	2.20	2.30			
CLIMAX	21	1335 E	1409	1346	S16	W39	4765	34	1		1346	2.50				G-SWF
SAC PEAK	21	1357 E	1410	1357 E	S17	W40	4759	13 D	1	2		2.20			15	
CAPRI-S	21	1537 E	1555		N22	W22	4764	18 D	1	3	1538	2.00	2.10			

SOLAR FLARES

SEPTEMBER 1958

OBSERVATORY	DATE SEPT 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
CAPRI-S	22	0650	0907 D		N24	W28	4764	137 D	2	1	0731	6.00	6.80			
CAPRI-S	22	0741 E	0907 D		S17	W42	4765	86 D	2b	1	0816	10.00	16.00			
ATHENS	22	0743	0808		S12	W41	4765	25	1b	3		3.00	4.50			
TASHKENT	22	0744 E	0820		S18	W43	4765	36 D	1b							
KHARKOV	22	0751 E	0832		S20	W40	4765	41 D	2							S-SWF
KHARKOV	22	0751 E	0904		S17	W46	4765	73 D	2							
MEUDON	22	0816 E	0839 D		S19	W44	4765	23 D	1b							
UCCLE	22	1007 E	1035		N22	W35	4764	28 D	1	2		2.20				
UCCLE	22	1014	1035	1016	N18	W65	4756	21	1b	2	1016	2.20	2.70			
CAPRI-S	22	1016 E	1030		N16	W66	4756	14 D	2	2	1017	4.00	9.20			
MCMATH	22	1402	1420	1406	N20	W32	4764	18	1	2	1406	1.79	2.18		76	
CAPRI-S	22	1403 E	1420 D		N23	W31	4764	17 D	1	3	1414	2.40	2.80			
OTTAWA	22	1404	1431	1407	N20	W33	4764	27	1	3	1407	2.09	2.55			
MCMATH	22	2100	2127 D	2118	N22	W36	4764	27 D	1	1	2118	3.23	4.04		65	
NEDERHORST	23	1027 E	1050 D		N15	W44	4764	23 D	2							
CAPRI-S	23	1024	1054		S20	W42	4765	30	2	3	1035	4.00	7.20	-		S-SWF
UCCLE	23	1029	1052	1035	S20	W50	4765	23	2b	2	1035	8.00	12.00			
MCMATH	23	1334	1500 D	1400	N23	W45	4764	86 D	1b	2	1400	2.91	4.12		69	
WENDEL	23	1340 E	1419 D		N22	W41	4764	39 D	1b				5.00			
CAPRI-S	23	1343 E	1420 D		N23	W39	4764	37 D	1	3	1350	2.00	2.80			
ZURICH	23	1345 E	1400 D		S23	W44	4764	15 D	2	2	1345		7.00			
CAPRI-S	24	0948 E	1007 D		S15	W60	4765	19 D	1	3	0950	1.60	3.70			
MEUDON	24	0954	1010		S15	W53	4765	16	1				2.00			
CAPRI-S	24	0955 E	1011 D		S17	E51	4776	16 D	1	3	0958	1.60	2.90			
STOCKHOLM	24	0957 E	1010 D		S20	E48	4776	13 D	1		1000	2.30	4.30			
CAPRI-S	24	1449	1453		S04	E25	4771	4	1	3	1449	1.50	1.80			
SAC PEAK	24	1932	2347 D	2002	N22	W63	4764	255 D	1	2		4.10			16	
MCMATH	24	2041 E	2138 D		N22	W64	4764	57 D	2b	1	2048	4.38	9.64		70	
WENDEL	25	0815 E	1014 D		S18	W65	4765	119 D	2				10.00			
LOCARNO	25	0840 E	1010		S14	W66	4765	90 D	2	3	0930		16.00			
UCCLE	25	0906	0921		S14	W80	4765	15	1	2						
UCCLE	25	0906	0943	0943	S18	W70	4765	37 D	1b	2						
LOCARNO	25	0930	0955		S24	E58	4778	25	1	3	0945		3.00			
LOCARNO	25	1015	1050		S24	E58	4778	35	1	3	1015		2.00			
MEUDON	25	1017	1034		S22	E55	4778	17	1				2.00			
WENDEL	25	1152 E	1206 D		N20	W18	4777	14 D	1				3.00			
WENDEL	25	1312	1336 D		S24	E55	4778	24 D	1				4.00			
MEUDON	25	1313	1338		S22	E55	4778	25	1				2.00			
CAPRI-S	25	1315	1348 D		S22	E56	4778	33 D	1	2	1335	3.00	6.10			
MEUDON	25	1656	1712 D		S12	E70	4784	16 D	1				2.00			
CLIMAX	25	1927	2000	1943	S23	E50	4778	33	1		1943	2.40				
USNRL	25	1930	1954	1937	S24	E55	4778	24	1	2	1937	.56	1.24	2.00	99	
CLIMAX	25	2045	2113	2102	S03	E12	4771	28	1		2102	2.40				
CLIMAX	25	2255	2314	2301	S11	E57	4778	19	1		2301	2.20				S-SWF
HAWAII	25	2258 E	2320		S15	E56	4778	22 D	1	2	2258	3.40	7.90			
UCCLE	26	0945	0952		N23	W88	4764	7	1	2						
ATHENS	26	1423 E	1444		N21	W90	4764	21 D	1b	4		.40	4.00			
MEUDON	26	1537	1625	1544	S12	W23	4779	48	1							
MITAKA	27	0457 E	0511 D	0500	N28	E59	4786	14 D	1b	2	0457	4.70	8.13	1.62	115	

SOLAR FLARES

SEPTEMBER 1958

OBSERVATORY	DATE SEPT 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
WENDEL	27	0635 E	0649 D		N28	E54	4786	14 D	1				3.00			
ATHENS	27	0658 E	0744		N27	E53	4786	46 D	1	3		1.40	2.40			
CAPRI-S	27	0735 E	0911 D		N27	E54	4786	96 D	1	1	0740	2.00	3.50			
UCCLE	27	0823 E	0930		N28	E56	4786	67 D	1	4						
MEUDON	27	0830 E	0945	0850	N27	E55	4786	75 D	1				3.00			
MEUDON	27	1023	1100		N09	E47	4782	37	1				2.00			
UCCLE	27	1025 E	1032 D	1026	N08	E46	4782	7 D	1	2	1026	2.00	2.40			
CAPRI-S	27	1034 E	1145 D		N08	E45	4782	71 D	1	1	1038	2.00	2.80			
MEUDON	27	1028	1120	1043	N27	E55	4786	52	1&				3.00			
CAPRI-S	27	1034 E	1145 D		N27	E54	4786	71 D	1	1	1038	1.50	2.60			
ZURICH	27	1036 E	1046 D		N28	E53	4786	10 D	1	2	1036		3.00			
WENDEL	27	1039 E	1100 D		N28	E53	4786	21 D	1				3.00			
UCCLE	27	1044 E	1049 D		N28	E56	4786	5 D	1	2						
CAPRI-S	27	1203 E	1310 D		N27	E54	4786	67 D	1	3	1238	2.00	3.50			
MCMATH	27	1420	1500	1430	N30	W45	4769	40	1&	2	1430	2.60	4.03		68	
MEUDON	27	1421	1445	1425	N30	W48	4769	24	1				5.00			
CAPRI-S	27	1425 E	1445 D		N29	W45	4769	20 D	1	3	1426	2.00	3.20			
WENDEL	27	1427 E	1502 D		N30	W46	4769	35 D	1&				6.00			
WENDEL	27	1512	1603		S12	E38	4781	51	1				3.00			
WENDEL	27	1525 E	1543		N28	W48	4769	18 D	1				3.00			
HAWAII	28	0115	0135	0125	N33	W57	4769	20	1	1	0125	3.30	6.30			S-SWF
MITAKA	28	0127 E	0137	0127	N24	W58	4769	10 D	1&	1	0128	1.84	3.35	2.86	217	
MITAKA	28	0433	0445		N28	E40	4786	12	1	1	0435	1.24	1.81	1.47	115	
WENDEL	28	1118	1142		S12	E20	4781	24	1				4.00			
WENDEL	28	1503	1533 D		S10	E29	4781	30 D	1&				5.00			
ONDREJOV	28	1521 E	1527		N29	W63	4769	6 D	1	3	1523			2.10		
WENDEL	28	1522	1551 D		N27	W61	4769	29 D	1				3.00			Slow S-SWF
ONDREJOV	28	1533	1548	1533	N29	W63	4769	15	1	3	1533			3.40		
MITAKA	28	2339	2356	2343	S15	E13	4781	17	1	1	2339	.71	.77	2.16	143	
WENDEL	29	1237	1305		N30	E43	4787	28	1				4.00			
WENDEL	29	1555	1605 D		S14	E54	4791	10 D	1				4.00			
CLIMAX	29	1600	1640	1617	S08	E08	4781	40	1		1617	3.00				
MCMATH	29	*1600	1640 D	1612	S09	E07	4781	40 D	1	2	1612	4.20	4.43			
STOCKHOLM	30	0924 E	1000 D		S25	E60	4798	36 D	1		0945	.70	2.00			
ONDREJOV	30	0940	0951	0945	S23	E63	4798	11	1&	3	0945			2.40		S-SWF
CAPRI-S	30	0943 E	0958 D		S24	E68	4798	15 D	2	3	0945	2.50	7.10			
WENDEL	30	0944	1000		S09	E65	4792	16	1&				5.00			
WENDEL	30	1121	1130		S08	W02	4781	9	1				3.00			
CAPRI-S	30	1151	1202 D		S15	W24	4776	11 D	1	3	1153	2.00	2.20			
ONDREJOV	30	1154 E	1201 D		S15	W25	4776	7 D	1	3	1155			3.70		
WENDEL	30	1155	1205		S16	W24	4776	10	1				3.00			
ONDREJOV	30	1508 E	1514		S16	W27	4776	6 D	1	3	1509			2.60		
CLIMAX	30	2107	2141	2115	N30	E10	4786	34	1		2115	3.20				

COMMERCE - STANDARDS - BOULDER

CAPRI G ANACAPRI - GERMAN
CAPRI S ANACAPRI - SWEDISH
GOOD HOPE ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV* KIEV UNIVERSITY
KODAIKNL KODAIKANAL
KRASNYA KRASNYA PAKHRA
MOSCOW NIZMIR

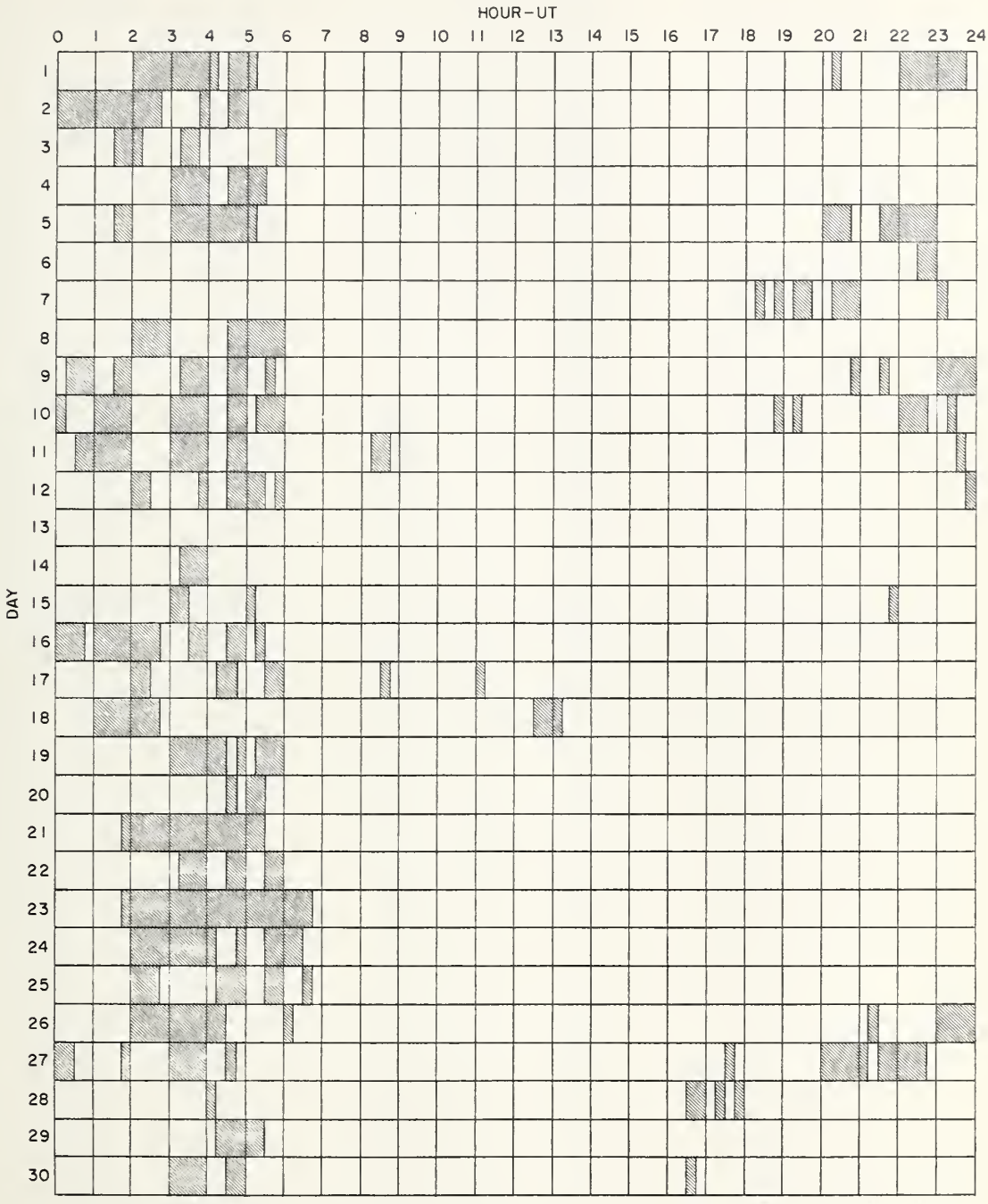
MOSCOW-G MOSCOW - GAISH
R O EDIN ROYAL OBSERVATORY, EDINBURGH
R O HERST GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
SAC PEAK SACRAMENTO PEAK
SCHAUINS SCHAUINSLAND
USNRL UNITED STATES NAVAL RESEARCH LABORATORY

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

E - LESS THAN & - PLUS
D - GREATER THAN - MINUS
U - APPROXIMATE □ - NOT REPORTED

INTERVALS OF NO FLARE PATROL OBSERVATIONS

SEPTEMBER 1958



Times indicated are accurate to the nearest 15 minutes.

Stations Included:

Anacapri (Swedish)
Arcetri
Athens
Climax
Dunsink
Hawaii
Kodaikanal
McMath
Mitaka
Locarno
Meudon
Nizamiah
Ondrejov
Ottawa
Royal Greenwich Observatory, Herstmonceux
Royal Observatory, Edinburgh
Sacramento Peak
Uccle
U. S. Naval Research Laboratory
Zurich.

SUBFLARES

Noted as follows: Date-Universal Time-Coordinates

AUGUST 1958

UCCLE	01	0819 E	N18 E13	
UCCLE	01	0838	S18 W65	
UCCLE	01	0905	N04 W13	
UCCLE	01	0912	S18 W65	
*OTTAWA	01	1143 E	N13 E07	
OTTAWA	01	1208	N26 E00	
OTTAWA	01	1210	S22 E35	
USNRL	01	1213 E	S24 E35	
OTTAWA	01	1219	N26 W00	
OTTAWA	01	1235	N26 E00	
WENOEL	01	1235 E	N26 E00	
OTTAWA	01	1252	S19 W61	
*OTTAWA	01	1329 E	N07 W19	
*CLIMAX	01	1335	N28 E01	
*OTTAWA	01	1336	N27 W01	
*CAPRI-G	01	1336	N29 W01	
*WENOEL	01	1338 E	N26 W01	
WENOEL	01	1413 E	S16 W70	
OTTAWA	01	1432	N26 W02	
OTTAWA	01	1435	N09 W15	
*SAC PEAK	01	1442 E	N17 E08	
*OTTAWA	01	1443	N15 E07	
WENOEL	01	1511 E	N22 E33	
OTTAWA	01	1513	S24 E33	
OTTAWA	01	1538	N26 W02	
SAC PEAK	01	1615	N27 W02	
OTTAWA	01	1618	N26 W02	
OTTAWA	01	1630	N19 W58	
CLIMAX	01	1839	S15 W90	
CLIMAX	02	0059	N28 W08	
UCCLE	02	0841	S18 W77	
UCCLE	02	0856	S08 E12	
*UCCLE	02	0910	S18 W77	
OTTAWA	02	1134	N09 W26	
*OTTAWA	02	1201	S19 W73	
*ONOREJOV	02	1207	S18 W76	
OTTAWA	02	1216	S08 E15	
OTTAWA	02	1219	S11 E08	
OTTAWA	02	1223	S13 E10	
OTTAWA	02	1227	N03 W28	
OTTAWA	02	1231	S09 E08	
SAC PEAK	02	1325	S10 E15	
OTTAWA	02	1326	S08 E15	
*OTTAWA	02	1338	N08 W34	
*CAPRI-S	02	1344 E	N08 W31	
USNRL	02	1508	S10 E08	
*CAPRI-S	02	1527 E	N26 W15	
*USNRL	02	1529 E	N27 W17	
SAC PEAK	02	1620	S10 E05	
OTTAWA	02	1621	S11 E06	
SAC PEAK	02	1645	N27 W16	
SAC PEAK	02	1707	S07 E08	
SAC PEAK	02	1722	N27 W16	
CLIMAX	02	1734 E	S12 E12	
CLIMAX	02	1933	S08 E12	
CLIMAX	02	1951	S12 E11	
CLIMAX	02	2022	S12 E02	
CLIMAX	02	2106	S08 E07	
*CLIMAX	02	2140	N28 W19	
CLIMAX	03	0116	N28 W20	
*MITAKA	03	0326 E	S10 E02	
CAPRI-G	03	0529	S25 E10	
*CAPRI-S	03	0903 E	N32 E28	
*CAPRI-S	03	0932	S07 W01	
LOCARNO	03	1020	N36 E33	
CAPRI-S	03	1109	N13 W14	
*OTTAWA	03	1119 E	N13 W19	
OTTAWA	03	1235	N27 W28	
OTTAWA	03	1245	N27 W27	
OTTAWA	03	1257 E	N27 W24	
*CLIMAX	03	1318	N13 W23	
OTTAWA	03	1352	N27 W27	
SAC PEAK	03	1352	N29 W22	
OTTAWA	03	1357	N27 W28	
CLIMAX	03	1442	N35 E26	
SAC PEAK	03	1442	N35 E26	
OTTAWA	03	1444	N35 E24	
*SAC PEAK	03	1452	S09 E00	
*OTTAWA	03	1453	S09 E00	
*CAPRI-S	03	1455	S08 E04	
*CLIMAX	03	1459	S07 E01	
SAC PEAK	03	1500	N08 W46	
CLIMAX	03	1501	N10 W46	
CAPRI-S	03	1502	N07 W40	
*CAPRI-G	03	1502	S08 E05	
OTTAWA	03	1502	N08 W45	
SAC PEAK	03	1507	N25 W22	
SAC PEAK	03	1527	N22 E63	
CLIMAX	03	1557	N06 E31	
SAC PEAK	03	2125	N28 W33	
SAC PEAK	03	2200	S23 E85	
*ATHENS	04	0620 E	N27 W35	
*CAPRI-S	04	0625 E	N27 W31	
CAPRI-S	04	0744 E	N25 W29	
OTTAWA	04	1206 E	S11 W07	
*OTTAWA	04	1218	S06 W06	
CAPRI-G	04	1227	S08 W05	
USNRL	04	1228 E	S06 W07	
*SAC PEAK	04	1307	N27 W38	
*USNRL	04	1309	N26 W38	
*OTTAWA	04	1309	N25 W37	
SAC PEAK	04	1352	N29 W41	
WENOEL	04	1353 E	N29 W40	
OTTAWA	04	1415 E	N27 W32	
SAC PEAK	04	1620	N29 W43	
OTTAWA	04	1621	N28 W41	
SAC PEAK	04	1622	S06 W08	
USNRL	04	1623 E	N29 W42	
USNRL	04	1623 E	S07 W09	
OTTAWA	04	1623	S07 W08	
SAC PEAK	04	1647	N14 W41	
USNRL	04	1648	N14 W41	
OTTAWA	04	1650	N28 W43	
*USNRL	04	1740	N34 E05	
*SAC PEAK	04	1925 E	N29 W44	
UCCLE	05	0826	N14 W34	
*CAPRI-S	05	0839 E	N33 W04	
OTTAWA	05	1055	S09 E47	
SAC PEAK	05	1327	N23 E33	
OTTAWA	05	1330	N24 E33	
SAC PEAK	05	1435	S11 W30	
OTTAWA	05	1453	N09 W72	
SAC PEAK	05	1515	N42 E04	
*SAC PEAK	05	1627	N09 W73	
*CLIMAX	05	1628	N11 W73	
*USNRL	05	1628	N10 W70	
*OTTAWA	05	1629	N08 W72	
OTTAWA	05	1700	N42 E02	
USNRL	05	1703	N11 E61	
WENOEL	05	1703 E	N10 E60	
OTTAWA	05	1704	N12 E60	
USNRL	05	1818	N10 W70	
USNRL	05	1659	N42 E03	
SAC PEAK	05	2117	N24 W29	
*CAPRI-S	06	0600 E	S13 W42	
*CAPRI-G	06	0625	N26 W45	
*CAPRI-G	06	0906 E	N26 W47	
*CAPRI-S	06	1156 E	N22 W50	
*OTTAWA	06	1232 E	S25 W33	
SAC PEAK	06	1327	N25 W40	
*SAC PEAK	06	1510	S17 E85	
SAC PEAK	06	1518	S25 W36	
*USNRL	06	1518	S18 E90	
USNRL	06	1519	S26 W36	
SAC PEAK	06	1520	S06 W80	
CLIMAX	06	1527 E	S16 E83	
SAC PEAK	06	1532	N25 W42	
SAC PEAK	06	1537	N25 E22	
SAC PEAK	06	1617	N26 W26	
SAC PEAK	06	1625	N16 E67	
USNRL	06	1651	N24 W42	
SAC PEAK	06	1715 E	N25 W44	
USNRL	06	1826	N45 E90	
USNRL	06	1833	N45 E90	
SAC PEAK	06	1858 E	N25 W46	
CLIMAX	07	0003	S04 W87	
UCCLE	07	0530	N27 W50	
UCCLE	07	0602	S12 W02	
*ATHENS	07	0649	N26 W57	
CAPRI-G	07	0853	N21 E11	
USNRL	07	1252 E	S17 E68	
USNRL	07	1312	N43 E86	
OTTAWA	07	1335	S11 W54	
SAC PEAK	07	1402	N26 W42	
OTTAWA	07	1403	N25 W42	
USNRL	07	1407	N43 E86	
SAC PEAK	07	1525	N10 W90	
USNRL	07	1526	N10 W90	
*R O HERST	07	1530 E	S16 E74	
SAC PEAK	07	1612	S11 W57	
OTTAWA	07	1615 E	S13 W56	
SAC PEAK	07	1656 E	N27 W62	
USNRL	07	1746	S12 W07	
USNRL	07	1847	S05 W53	
SAC PEAK	07	2309 E	S19 W09	
ONOREJOV	08	0834 E	S16 E50	
CAPRI-S	08	1029 E	S12 E51	
OTTAWA	08	1209	S10 E48	
OTTAWA	08	1232	S13 E52	
OTTAWA	08	1240	S10 E49	
LOCARNO	08	1250 E	S10 W66	
SAC PEAK	08	1422	N23 W69	
SAC PEAK	08	1542	S13 E04	
CLIMAX	08	1542	S12 E03	
USNRL	08	1548 E	S12 E03	
CLIMAX	08	1630	S12 E47	
ONOREJOV	08	1635 E	S12 E47	
WENOEL	08	1635 E	S10 E45	
*SAC PEAK	08	1652	S16 E47	
USNRL	08	1740	S11 W70	
USNRL	08	1802	N23 W13	
USNRL	08	1823	N20 W14	
USNRL	08	1829	N23 W13	
USNRL	08	1839	S25 E38	
USNRL	08	1858	S12 E10	
USNRL	08	1912	S12 E45	
USNRL	08	1936	S25 E38	
CLIMAX	08	2053	S11 E02	
SAC PEAK	08	2110 E	S13 E55	
SAC PEAK	08	2245 0	S11 E01	
SAC PEAK	08	2334 E	N15 E90	
*CAPRI-S	09	1121	S10 E35	
*OTTAWA	09	1123 E	S11 E33	
USNRL	09	1225	S25 E18	
USNRL	09	1227	S14 E33	
USNRL	09	1246	N34 W58	
OTTAWA	09	1247	N33 W57	
USNRL	09	1257	S13 W14	
USNRL	09	1323	S26 E15	
USNRL	09	1333	N41 W45	
USNRL	09	1352	N21 W32	
*CAPRI-G	09	1426	S15 E42	
*SAC PEAK	09	1443 E	S15 E44	
USNRL	09	1459	S26 E15	
*SAC PEAK	09	1520	S06 W81	
USNRL	09	1605	S06 W80	
SAC PEAK	09	1605	S06 W81	
SAC PEAK	09	1607	N24 W81	
SAC PEAK	09	1610	S16 E37	
USNRL	09	1611	S16 E37	
*SAC PEAK	09	1615	N44 E56	
*SAC PEAK	09	1655	S12 W11	
SAC PEAK	09	1700	N24 W81	
SAC PEAK	09	1725	N16 E87	
SAC PEAK	09	2326	S26 E07	
SAC PEAK	09	2330	S17 E39	
UCCLE	10	0943	N20 W35	
*CAPRI-G	10	1133 E	S16 E25	
CLIMAX	10	1341	S22 E12	
OTTAWA	10	1348	S23 E14	
USNRL	10	1355 E	S23 E14	
USNRL	10	1355 E	S25 E01	
*CLIMAX	10	1436	N20 W37	
*OTTAWA	10	1437	N18 W38	
*USNRL	10	1437	N19 W38	
*ONOREJOV	10	1446 E	N18 W38	
USNRL	10	1450	N40 W56	
LOCARNO	10	1500	N33 W56	
USNRL	10	1511	S22 E13	
SAC PEAK	10	1830 E	S15 E19	
SAC PEAK	10	1830 E	S24 E13	
SAC PEAK	10	1932 E	S27 E17	
SAC PEAK	10	2100	S25 E11	
SAC PEAK	10	2100	S15 E19	
ONOREJOV	11	0714 E	S16 E13	
*ATHENS	11	0727 E	S22 W55	
*CAPRI-S	11	0729	S21 W55	
*CAPRI-G	11	0733	S20 W53	
ZURICH	11	0810 E	S21 W51	
ZURICH	11	0901	S24 E10	
UCCLE	11	0927	S10 E16	
UCCLE	11	1027	S11 E16	
ONOREJOV	11	1100	S11 W32	
WENOEL	11	1105 E	S26 E13	
OTTAWA	11	1109	N21 W46	
*OTTAWA	11	1208	S16 E19	
OTTAWA	11	1209	N11 E38	
WENOEL	11	1211 E	S23 E00	
*OTTAWA	11	1222	N21 W47	
OTTAWA	11	1329	S22 W56	
WENOEL	11	1329 E	S20 W54	
CAPRI-S	11	1330 E	S21 W57	
WENOEL	11	1332 E	S09 W70	
WENOEL	11	1341 E	N42 W69	
*SAC PEAK	11	1410	N19 W50	
*OTTAWA	11	1413	N18 W50	
*CLIMAX	11	1417	N13 W51	
*R O E01N	11	1420 E	N20 W48	
SAC PEAK	11	1440	S15 E16	
*SAC PEAK	11	1452	N22 W49	
*CLIMAX	11	1453	N26 W50	
CAPRI-S	11	1456 E	S14 W20	
CLIMAX	11	1614	S14 E07	
SAC PEAK	11	1617	S15 E07	
OTTAWA	11	1623	S25 E09	
*SAC PEAK	11	1650	N22 W52	
*OTTAWA	11	1655	N20 W51	
*SAC PEAK	11	1725	S12 E12	
SAC PEAK	11	1737	S26 E06	
SAC PEAK	11	1745	N23 W51	
SAC PEAK	11	1817	N23 W51	
SAC PEAK	11	1817	S11 E11	
*SAC PEAK	11	1902	N23 W51	
*HAWAII	11	1906	N21 W51	
USNRL	11	1946 E	S10 W35	
USNRL	11	1946 E	S26 E05	
SAC PEAK	11	2020	N21 W54	
*SAC PEAK	11	2207 0	N20 W55	
SAC PEAK	11	2317	S15 E06	
SAC PEAK	12	1320	S09 W90	
SAC PEAK	12	1420	S14 W48	
SAC PEAK	12	1430	S23 W75	
CLIMAX	12	1432	S20 W70	
USNRL	12	1433	S23 W70	
OTTAWA	12	1434	S22 W69	
SAC PEAK	12	1437	S24 W29	
OTTAWA	12	1438	S24 W28	
SAC PEAK	12	1442	N22 W67	
SAC PEAK	12	1505	S14 W48	
SAC PEAK	12	1532	N19 W67	
SAC PEAK	12	1542	S10 W90	
SAC PEAK	12	1600	S26 W13	
*SAC PEAK	12	1610	S23 W85	
SAC PEAK	12	1630	N20 W64	
SAC PEAK	12	1640	S25 W25	
SAC PEAK	12	1642	S15 W02	
OTTAWA	12	1643	S13 W04	
*SAC PEAK	12	1650	N19 W69	
SAC PEAK	12	1710	S28 W12	
USNRL	12	1711	S28 W13	
SAC PEAK	12	1730	S12 W49	
USNRL	12	1732	S13 W50	
USNRL	12	1816	S11 W50	
USNRL	12	1816	S24 W27	
USNRL	12	1818	S14 W11	
SAC PEAK	12	1955	N19 W69	
USNRL	12	1956	N19 W67	
SAC PEAK	12	2040	N24 W55	
SAC PEAK	12	2040	S25 W17	
SAC PEAK	12	2047	S06 W26	
SAC PEAK	12	2102	S12 W55	
SAC PEAK	12	2132	S14 W12	
SAC PEAK	12	2152	S12 W55	
SAC PEAK	12	2210	S14 W53	
*HAWAII	12	2212	S15 W50	
SAC PEAK	12	2220	S14 W12	
SAC PEAK	12	2247	S13 W54	
SAC PEAK	12	2320	N45 E15	
SAC PEAK	12	2320	N19 W73	
ATHENS	13	0653 E	S13 W17	
*CAPRI-S	13	1158 E	N21 W70	
SAC PEAK	13	1310 E	S14 W17	
SAC PEAK	13	1312	S21 W90	
SAC PEAK	13	1325	N22 W79	
OTTAWA	13	1334	N21 W76	
*SAC PEAK	13	1342	S15 W14	
SAC PEAK	13	1350	S22 W90	
SAC PEAK	13	1410	N20 W78	
OTTAWA	13	1414 E	N22 W75	
*SAC PEAK	13	1500	S20 W12	
SAC PEAK	13	1520	S23 W10	
SAC PEAK	13	1805	N17 W80	
*USNRL	13	1913	S14 W23	
SAC PEAK	13	1927 E	N15 W85	
USNRL	13	2011	N18 W91	
SAC PEAK	13	2037 E	N17 W80	
SAC PEAK	13	2200 E	N17 W85	
SAC PEAK	13	2307	N45 E05	
SAC PEAK	13	2307	N15 E22	
*SAC PEAK	13	2312	S14 W25	
SAC PEAK	13	2332	N17 W85	
WENOEL	14	0630 E	S25 W26	
*CAPRI-G	14	0735	S24 W25	
*CAPRI-S	14	0802	S15 W22	
*CAPRI-G	14	0806	S14 W24	
*CAPRI-S	14	1240	S14 W29	
SAC PEAK	14	1304 E	S14 W32	
SAC PEAK	14	1304 E	N18 W90	
*SAC PEAK	14	1320	S15 W3?	
*OTTAWA	14	1322	S14 W29	
SAC PEAK	14	1327	N18 W90	
SAC PEAK	14	1350	S15 W32	
CLIMAX	14	1354	S13 W30	
OTTAWA	14	1355	S14 W29	
OTTAWA	14	1402	S15 W34	
SAC PEAK	14	1410	N05 E90	
OTTAWA	14	1410	S14 W30	
SAC PEAK	14	1410	S28 E80	
OTTAWA	14	1432	S21 W27	
SAC PEAK	14	1507	N19 W90	
SAC PEAK	14	1517	N21 E90	
SAC PEAK	14	1530	S12 W75	
SAC PEAK	14	1532	N18 W90	
*CLIMAX	14	1624	S13 W25	

SUBFLARES

Noted as follows: Date-Universal Time-Coordinates

AUGUST 1958

*CLIMAX	14	1626	S13 W32
SAC PEAK	14	1715	S25 W56
SAC PEAK	14	1725 E	S14 W34
SAC PEAK	14	1817 E	S15 W35
USNRL	14	1938 E	N18 E90
HAWAII	14	2158	S14 W35
HAWAII	14	2306	S13 W40
SAC PEAK	14	2314 E	S15 W40
*HAWAII	15	0010	S13 W39
*ATHENS	15	0612 E	S14 W43
ATHENS	15	0619	S26 W60
*CAPRI-S	15	0901 E	S13 W37
USNRL	15	1245	S16 W90
SAC PEAK	15	1302	S26 W45
USNRL	15	1302	S25 W44
*SAC PEAK	15	1305	N10 E90
*SAC PEAK	15	1305	N13 E82
*USNRL	15	1311	N15 E80
OTTAWA	15	1325	S23 W59
SAC PEAK	15	1327	S23 W63
USNRL	15	1328	S24 W61
USNRL	15	1430	S26 W42
SAC PEAK	15	1432	S17 W90
USNRL	15	1436	S17 E90
*USNRL	15	1527	S14 W49
*SAC PEAK	15	1530	S14 W49
SAC PEAK	15	1904 E	S15 W50
USNRL	15	1918	S26 W41
UCCLE	16	0834	S14 W47
UCCLE	16	0834 E	S12 W57
*CAPRI-G	16	0925	S07 W39
OTTAWA	16	1135	S13 W47
UCCLE	16	1137	S12 W50
UCCLE	16	1139 E	S13 W61
UCCLE	16	1149 E	N18 E79
OTTAWA	16	1231	N23 E52
OTTAWA	16	1256	N25 E29
SAC PEAK	16	1305 E	S15 W63
SAC PEAK	16	1305 E	N23 E29
USNRL	16	1308 E	N25 E30
USNRL	16	1308 E	N28 E54
USNRL	16	1308 E	N10 E44
*SAC PEAK	16	1315	S13 W52
*R O E01N	16	1318	S13 W50
SAC PEAK	16	1337	S17 E34
OTTAWA	16	1340	S15 E34
CAPRI-G	16	1343	S16 E43
SAC PEAK	16	1355	S23 W90
SAC PEAK	16	1407	S13 E27
*SAC PEAK	16	1445	N25 E29
*USNRL	16	1445 E	N25 E28
*OTTAWA	16	1446	N25 E27
SAC PEAK	16	1607	S13 W57
SAC PEAK	16	1855	S27 W71
SAC PEAK	16	2230 E	S14 W66
SAC PEAK	16	2315	S13 W57
UCCLE	17	0835	S14 W73
CAPRI-G	17	1107 E	S14 W76
USNRL	17	1316	N20 E90
*CAPRI-G	17	1402	S25 W68
USNRL	17	1447	S25 W63
CAPRI-S	17	1449	S25 W65
SAC PEAK	17	1537	N22 E89
SAC PEAK	17	1540	S27 W68
SAC PEAK	17	1545	N10 E28
*ONOREJOV	17	1606	N08 E29
SAC PEAK	17	2220	S14 W78
ONOREJOV	18	0604 E	S07 W61
ATHENS	18	0638	N18 E49
UCCLE	18	0957	N21 E54
SAC PEAK	18	1550	N18 E43
SAC PEAK	18	1552	N09 E15
UCCLE	18	1553	N19 E45
USNRL	18	1554	N18 E44
UCCLE	18	1621	N08 W70
USNRL	18	1750	N16 E40
SAC PEAK	18	1852	N19 E67
USNRL	18	1856 E	N21 E67
SAC PEAK	18	1912	N45 W57
USNRL	18	1913	N44 W58
USNRL	18	1929	S08 W71
HUANCAYO	18	1930 E	S09 W70
SAC PEAK	18	2050	S07 W71
CAPRI-G	19	0624	N17 E75
*CAPRI-S	19	0625 E	N18 E37
UCCLE	19	0854	S21 E65
USNRL	19	1200 E	S11 W52
USNRL	19	1227	N12 E30
USNRL	19	1241	S11 W15
CAPRI-G	19	1243	S14 W90
*USNRL	19	1313	S11 W52
*OTTAWA	19	1315	S12 W54
SAC PEAK	19	1400	N18 E31
SAC PEAK	19	1412	N23 E60
USNRL	19	1417	N19 E32
*USNRL	19	1457	S10 W90
OTTAWA	19	1517	N21 E28
SAC PEAK	19	1535	S09 W85
SAC PEAK	19	1615	S10 W89
SAC PEAK	19	1625	S20 E60
SAC PEAK	19	1727	N20 E30
SAC PEAK	19	1745	S20 E60
SAC PEAK	19	1812	S08 W85
USNRL	19	1829	S19 E58
USNRL	19	1838	N15 E22
USNRL	19	1937	N22 E53
CLIMAX	19	2237	N16 E46
UCCLE	20	1006 E	N16 E16
UCCLE	20	1017 E	N22 E18
UCCLE	20	1100	N20 E24
UCCLE	20	1107	N20 E23
UCCLE	20	1146	N03 E12
ONOREJOV	20	1147 E	S02 E13
USNRL	20	1156 E	N03 E13
UCCLE	20	1157	N04 E14
USNRL	20	1400	N20 E20
SAC PEAK	20	1430	N19 E14
*SAC PEAK	20	1625	N16 E14
*CLIMAX	20	1627	N14 E14
USNRL	20	1715	N04 E11
USNRL	20	1726	N16 E15
USNRL	20	1829	N18 E16
USNRL	20	1854	N15 E11
SAC PEAK	20	1939	N20 E18
USNRL	20	1950	N15 E13
SAC PEAK	20	2012	N15 E13
SAC PEAK	20	2104	N06 E81
SAC PEAK	20	2104 E	S12 W29
SAC PEAK	20	2107	N23 E40
HAWAII	21	0034	N20 E15
CAPRI-G	21	0835	S10 W42
*UCCLE	21	0854 E	N08 E69
*CAPRI-G	21	0906	N09 E65
USNRL	21	1215	N18 E07
USNRL	21	1218	N17 E02
USNRL	21	1245	N08 E61
USNRL	21	1339	N08 E61
USNRL	21	1435	S18 E32
USNRL	21	1450	N09 E65
CLIMAX	21	1529	N07 E63
USNRL	21	1614	N15 W04
USNRL	21	1623	S17 E16
USNRL	21	1718	N08 E61
USNRL	21	1729	N19 E06
USNRL	21	1756	N19 E06
USNRL	21	1811	N07 E58
USNRL	21	1818	N22 E05
USNRL	21	1830	N08 E60
USNRL	21	1845	N16 W00
*HAWAII	21	1904 E	N09 E59
USNRL	21	1923	N14 W05
USNRL	21	1940	S13 E90
USNRL	21	1948	N08 E58
HUANCAYO	21	2029 E	S10 W40
USNRL	22	1231	N31 W28
OTTAWA	22	1255	N20 E23
OTTAWA	22	1302	N20 E24
USNRL	22	1317 E	N20 E24
USNRL	22	1331	N12 E61
OTTAWA	22	1344	N09 E49
USNRL	22	1403 E	S18 E21
OTTAWA	22	1624	N14 W17
USNRL	22	1629 E	N14 W18
*USNRL	22	1723	N27 W62
USNRL	22	1807	N18 W11
UCCLE	23	0944 E	N18 W21
*CAPRI-S	23	1022 E	N07 E37
*OTTAWA	23	1242	N15 W28
*OTTAWA	23	1300	N15 W28
*USNRL	23	1303	N16 W28
*USNRL	23	1315	N18 W21
*OTTAWA	23	1326	N19 W22
*USNRL	23	1326	N22 W22
*R O HERST	23	1418 E	N20 W20
SAC PEAK	23	1455	S12 W78
SAC PEAK	23	1535	S12 W78
SAC PEAK	23	1645	S12 W78
SAC PEAK	23	1722	N20 W24
SAC PEAK	23	1845	N20 W24
HAWAII	23	2200	N16 W32
CAPRI-G	24	0535	S13 W08
CAPRI-G	24	0542	N16 W38
*ATHENS	24	0627	N13 W38
CAPRI-S	24	1137 E	N18 W31
*CAPRI-S	24	1211	S16 E80
SAC PEAK	24	1443	N06 E21
SAC PEAK	24	1510	S16 W42
SAC PEAK	24	1600	S16 W43
SAC PEAK	24	1642 E	S18 W09
HAWAII	24	2010	N09 E18
HAWAII	24	2042	N20 W27
SAC PEAK	24	2317	S12 W90
SAC PEAK	24	2317	S32 W76
CAPRI-G	25	0941	N09 E22
*CAPRI-S	25	1028 E	N08 E06
*OTTAWA	25	1303	N09 E23
*SAC PEAK	25	1345	S20 W55
SAC PEAK	25	1350	S10 W90
SAC PEAK	25	1400	S08 E80
SAC PEAK	25	1407	S11 W90
*CLIMAX	25	1417	N16 W32
*SAC PEAK	25	1417	N16 W51
*ONOREJOV	25	1420 E	N16 W50
SAC PEAK	25	1427	N22 E60
SAC PEAK	25	1427	S09 E80
SAC PEAK	25	1515	S17 W27
SAC PEAK	25	1532	N16 W32
SAC PEAK	25	1610	S44 E40
SAC PEAK	25	1715	S10 E85
SAC PEAK	25	1745 E	S17 W25
SAC PEAK	25	2127 E	S16 W28
SAC PEAK	25	2220 E	S16 W32
CLIMAX	25	2300	N06 E18
CAPRI-G	26	0549	N08 E13
*CAPRI-S	26	0804 E	N24 E62
UCCLE	26	0827 E	N24 E75
UCCLE	26	0923 E	N23 E67
UCCLE	26	0923 E	S15 W35
UCCLE	26	1046	S11 E55
UCCLE	26	1126 E	S11 E68
UCCLE	26	1134	S17 W36
UCCLE	26	1136	N25 E75
OTTAWA	26	1208	S07 E64
*UCCLE	26	1237	S23 E68
UCCLE	26	1257	N23 E64
OTTAWA	26	1305	S07 E63
OTTAWA	26	1322	N18 W56
UCCLE	26	1333 E	N21 W58
SAC PEAK	26	1333 E	N20 W57
SAC PEAK	26	1335	N23 W46
UCCLE	26	1335	N24 W46
OTTAWA	26	1336	N22 W46
CLIMAX	26	1341	N08 E09
SAC PEAK	26	1342	N08 E09
CLIMAX	26	1342	S10 E66
OTTAWA	26	1342	S07 E63
UCCLE	26	1343	N08 E09
OTTAWA	26	1344	N08 E10
SAC PEAK	26	1345	S08 E65
SAC PEAK	26	1350	N28 E61
OTTAWA	26	1351	N30 E61
SAC PEAK	26	1357	S12 W65
OTTAWA	26	1358	S13 W64
SAC PEAK	26	1402	S17 W68
*SAC PEAK	26	1405	S44 E30
*CLIMAX	26	1406	S43 E28
OTTAWA	26	1406	S18 W65
OTTAWA	26	1407	S43 E30
CAPRI-S	26	1412 E	S50 E40
SAC PEAK	26	1440	S16 W36
OTTAWA	26	1441	S17 W36
OTTAWA	26	1453	S06 E63
SAC PEAK	26	1455	S08 E65
SAC PEAK	26	1557	S08 E64
*SAC PEAK	26	1607	N17 W65
*USNRL	26	1610	N18 W65
SAC PEAK	26	1632	N25 E63
*SAC PEAK	26	1700	S08 E63
*OTTAWA	26	1707 E	S07 E62
SAC PEAK	26	1735	S08 E63
SAC PEAK	26	1815	N17 W67
SAC PEAK	26	2225 E	N35 E90
CLIMAX	27	0056 E	S13 W48
*CAPRI-S	27	0600 E	S09 E53
CAPRI-G	27	0812	S43 E21
CAPRI-S	27	0813	S50 E20
*CAPRI-S	27	0857	S09 E56
*ZURICH	27	0859	S08 E54
LOCARNO	27	0930	N03 E06
UCCLE	27	1005	N25 E55
UCCLE	27	1018	N28 W55
UCCLE	27	1040	S08 E42
UCCLE	27	1045	N26 E55
*LOCARNO	27	1050	S11 E49
OTTAWA	27	1147	S10 E53
UCCLE	27	1152	S07 E49
*OTTAWA	27	1243	N09 W39
*USNRL	27	1244	N10 W42
*OTTAWA	27	1310	N10 W19
*USNRL	27	1310	N10 W20
*WENOEL	27	1314 E	N11 W20
SAC PEAK	27	1327	N25 E34
OTTAWA	27	1330	N27 E52
*USNRL	27	1442	S09 E50
*OTTAWA	27	1445	S08 E48
*CAPRI-S	27	1449 E	S08 E53
*USNRL	27	1530	N26 E51
SAC PEAK	27	1617	S20 W35
SAC PEAK	27	1617	N15 W90
MEUDON	27	1620	N13 W90
USNRL	27	1620	N14 W90
SAC PEAK	27	1635	N24 W57
USNRL	27	1638	N23 W56
*SAC PEAK	27	1647	S22 W65
*USNRL	27	1650	S23 W64
SAC PEAK	27	1845	N10 W07
SAC PEAK	27	1910	N24 W58
USNRL	27	1911	N23 W58
SAC PEAK	27	1930	N08 W06
USNRL	27	1938 E	N08 W07
SAC PEAK	27	2057	N25 E49
SAC PEAK	27	2122	S12 W90
SAC PEAK	27	2212	N10 W12
SAC PEAK	27	2227	S09 E35
SAC PEAK	27	2252	N22 W62
CAPRI-G	28	0544	N27 E39
ONOREJOV	28	0549 E	N26 E40
CAPRI-G	28	0705	S08 E39
ONOREJOV	28	0718 E	N06 W13
CAPRI-G	28	0719	N07 W11
*UCCLE	28	0824 E	N13 W29
UCCLE	28	0953	S08 E36
UCCLE	28	1002	S05 W13
UCCLE	28	1012	S05 W04
*UCCLE	28	1029	S19 W60
UCCLE	28	1035	N15 E45
CAPRI-S	28	1036	S14 W90
*UCCLE	28	1112	S10 E41
*UCCLE	28	1114	S09 E35
WENOEL	28	1304 E	N16 E47
SAC PEAK	28	1332	S16 W90
*CLIMAX	28	1422	S08 E33
*SAC PEAK	28	1422	S08 E34
SAC PEAK	28	1422	S18 W90
OTTAWA	28	1423	S07 E33
SAC PEAK	28	1450	N27 E43
SAC PEAK	28	1525	N25 E35
*SAC PEAK	28	1540	S08 E33
*OTTAWA	28	1541	S07 E33
*SAC PEAK	28	1602	S08 E32
*HUANCAYO	28	1605 E	S08 E32
*OTTAWA	28	1605	S07 E32
*WENOEL	28	1606 E	S07 E30
SAC PEAK	28	1610	N25 E35
*SAC PEAK	28	1712	S08 E31
SAC PEAK	28	1732	S08 E32
SAC PEAK	28	1940	S08 E45
SAC PEAK	28	2100	N17 E33
SAC PEAK	28	2147	N07 W23
SAC PEAK	28	2252	N21 W76
SAC PEAK	28	2322 U	S16 W72
ONOREJOV	29	0618 E	S20 W80
*CAPRI-S	29	0806 E	S13 E28
*CAPRI-G	29	0818	S09 E26
*UCCLE	29	0836 E	S09 E25
UCCLE	29	0905	S11 E35
*CAPRI-S	29	0911	S10 E26
CAPRI-G	29	0927	S18 W85
UCCLE	29	1043 E	S12 E14
UCCLE	29	1105	S11 E36
USNRL	29	1200 E	S09 E36
*WENDEL	29	1217 E	S08 W24
*OTTAWA	29	1237 E	S08 E35
*WENOEL	29	1237 E	S10 W32
*USNRL	29	1239	S08 E35
*CAPRI-G	29	1240 E	S09 E36
*OTTAWA	29	1254	N06 W33
*USNRL	29	1255	N06 W34
WENDEL	29	1426 E	S22 E55
USNRL	29	1431	N15 E30
WENOEL	29	1433 E	N16 E28
*USNRL	29	1504	S13 E46
USNRL	29	1524	S21 W90
USNRL	29	1548	S08 E33
SAC PEAK	29	1630	S12 E18
USNRL	29	1632	S11 E20
USNRL	29	1700	S08 E33
USNRL	29	1828	S09 E19
USNRL	29	1905	S16 E16
USNRL	29	1919	S07 E16
SAC PEAK	29	2032	S09 E31
SAC PEAK	29	2045	S20 W88
SAC PEAK	29	2110	N21 E75
SAC PEAK	29	2122	S08 E08
SAC PEAK	29	2125	N19 E18
SAC PEAK	29	2135	N07 W39
SAC PEAK	29	2231 E	N15 E23
HAWAII	29	2348	S08 E28
HAWAII	30	0130	S08 E28
ONOREJOV	30	0620 E	N32 E75
*ATHENS	30	0655 E	N27 E78
ONOREJOV	30	0851 E	S24 E37
UCCLE	30	1021	S11 E22
UCCLE	30	1031	S10 E24
UCCLE	30	1032 E	S07 E20
UCCLE	30	1146 E	S09 E05
WENOEL	30	1304 E	S08 W16
*USNRL	30	1305	S08 E17
WENOEL	30	1357 E	N18 E30
WENOEL	30	1425 E	S13 E40
WENOEL	30	1430 E	N16 E16
LOCARNO	30	1510	S12 E30
SAC PEAK	30	1540	N36 E35
SAC PEAK	30	1650	N36 E35
SAC PEAK	30	1735	S12 E18
SAC PEAK	30	1735	N36 E36
CLIMAX	30	2036	S10 E16
HAWAII	30	2138	S08 E14
HAWAII	30	2248	S08 E14
HAWAII	31	0154 E	N07 W55
WENOEL	31	0637 E	N24 E74
*CAPRI-G	31	0658	S10 W01
*ATHENS	31	0744 E	S08 W03
*CAPRI-S	31	0834 E	N10 W58
CAPRI-S	31	0948	S07 E06
USNRL	31	1216	S07 W16
SAC PEAK	31	1332	N20 E02
*SAC PEAK	31	1402	S09 E11
SAC PEAK	31	1427	S09 E05
USNRL	31	1429	S09 E15
SAC PEAK	31	1455	S09 E10
SAC PEAK	31	1502	N10 W60
WENOEL	31	1509 E	N10 W62
*SAC PEAK	31	1545	S08 W06
*USNRL	31	1545	S08 W06
SAC PEAK	31	1605	S10 E09
*CLIMAX	31	1654	S08 E09
CLIMAX	31	1907	S09 W08
SAC PEAK	31	1924 E	S08 W07
SAC PEAK	31	2205	N16 W03
*SAC PEAK	31	2245	S09 E05
*CLIMAX	31	2246	S09 E06

SOLAR FLARES

JANUARY 1958

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION			DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
					APPROX.		McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
	JAN 1958	START	END	MAX. PHASE	LAT.	MER. DIST.										
TASHKENT	01	0511 E	0615		N03	E66	4346	64 D	1&	3	0512	7.70	20.30	1.60	55	
ABASTUMANI	01	0654 E	0826 D	0801 U	N23	W26	4337	92 D	1&	3		11.00	5.40			
SYDNEY	02	0313	0330	0316	N21	E20	4338	17	1	3	0316	2.00	3.00			
SYDNEY	02	0541	0622	0551	N17	E26	4340	41	2	3	0551	5.00	6.00			S-SWF
TASHKENT	02	0543	0613	0547	S18	E02	4342	30	1&	3	0546	5.50	6.20	3.20	100	
SYDNEY	02	0557	0618	0600	N21	E20	4338	21	1	3	0600	4.00	4.00			
MEUDON	02	0930 E	0947	0940	S20	W50	4333	17 D	1		0940		3.00			
SYDNEY	03	0139 E	0157		N16	E59	4347	18 D	1	3	0139	2.00	4.00			
SYDNEY	03	0219	0252	0228	N16	E59	4347	33	1	3	0228	1.00	3.00			
SYDNEY	03	0406 E	0431		N15	E55	4347	25	1	3	0406	2.00	4.00			
SYDNEY	03	0459 E	0550	0522	S20	W47	4333	51 D	2	3	0522	4.00	5.00			
ONDREJOV	04	1119	1130		S07	E65	4356	11	1	2	1121			2.40		
ONDREJOV	04	1137	1158		S19	W02	4340	21	1	3	1151			2.40		
ONDREJOV	06	1212 E	1240		N11	E14	4347	28 D	1&	2	1236			2.10		
ONDREJOV	06	1249	1330 D	1254	N11	E14	4347	41	1&	2	1254			2.90		
ONDREJOV	07	0858 E	0905 D	0900	S17	E45	4356	7 D	1	2	0900			2.80		
MEUDON	07	0932 E	0958 D	0940	S16	E00	4348	26 D	2&		0940		14.00			
ONDREJOV	07	0932 E	1002 D		S18	E02	4348	30 D	2	3	0950			2.60		
SYDNEY	09	0216 E	0251	0222	N13	W20	4347	35 D	1	3	0222	1.50	2.00			
KYOTO	09	0220	0233 D		N10	W21	4347	13 D	1		0220				120	
KRASNYA	09	1029 E	1038 D	1031	S17	E32	4355	9 D	1	2	1031	3.90	2.30		66	
KIEV	09	1116	1143	1123	S19	E29	4355	27	1	3	1123	1.80	2.50		63	
SYDNEY	09	2307	2339	2318	N16	W34	4347	32	1	2	2318	4.00	5.00			
SYDNEY	09	2310	2315	2313	S17	E69	4363	5	1	2	2313	.75	3.00			
SYDNEY	09	2310	2345	2326	S15	E68	4363	35	1	2	2326	.75	2.00			
KYOTO	10	0439 E	0443 D		S15	E57	4360	4 D	1		0439				100	
ABASTUMANI	10	0850 E	0911 D	0905 U	S15	E16	4355	21 D	1	2		4.60	2.40			
ABASTUMANI	11	0858	0912 D	0910	S30	E86		14 D	1	2		7.20	15.00			Slow S-SWF
ALMA-ATA	12	0630 E	0651 D	0638	S18	W09	4355	21 D	1&	3			3.60			
SYDNEY	13	0218 E	0249	0221	N24	E08	4359	31 D	2	3	0221	7.00	8.00			S-SWF
SIMEIZ	13	0737	0750	0740	N13	E48	4370	13	1	2	0745	2.18	3.50	1.90	60	
NEDERHORST	13	1300	1315		S20	E26	4365	15	2	2						
MEUDON	13	1442 E	1515 D		S17	E30	4365	28 D	1							
MEUDON	13	1505	1515 D		N12	E50	4370	10	1							
SYDNEY	13	2325	2340	2328	N26	E03	4359	15	1	2	2328	2.00	3.00			
SYDNEY	14	0052	0106	0056	N26	E03	4359	14	1	3	0056	2.00	2.00			
SYDNEY	14	0148	0202	0150	N15	E48	4370	14	1	3	0150	3.00	4.00			
SYDNEY	14	0248	0311	0253	N15	E58	4370	23	1	3	0253	2.00	3.00			
SYDNEY	14	0250	0305	0253	N12	W12	4359	15	1	3	0253	2.00	2.00			
ABASTUMANI	14	0732	0820	0737	S17	W34	4355	48	1	2		7.10	3.80			
KODAIKNL	15	0500 E	0537 D	0514	S14	W52	4355	37 D	1	3	0508	3.20	5.40	1.90	121	

SOLAR FLARES

JANUARY 1958

OBSERVATORY	DATE JAN 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
ALMA-ATA	15	0518 E	0640 D	0521	S13	W55	4355	82 D	1&	2			5.80			
ALMA-ATA	15	0518 E	0641 D	0521	S15	W53	4355	83 D	1	2			5.90			Slow S-SWF
ABASTUMANI	15	0613 E	0626 D	0624 U	S15	W52	4355	13 D	1&	2		14.00	12.00			
KHARKOV	16	0900 E	0947		N15	E10	4370	47 D	1	2	0926	3.00	3.00	2.20		
KHARKOV	16	0924	0955	0927	S14	E52	4377	31	1&	2	0926	9.00	15.00	2.20		
SCHAUINS	16	0930 E	0945 D		S08	E55	4377	15 D	1	2			4.00	1.90		
SCHAUINS	16	1202 E	1235		S23	W67	4356	33 D	1&	1			4.00	3.50		
SCHAUINS	16	1425 E	1447		N19	E20	4375	22 D	2	1			6.00	2.50		S-SWF
SYDNEY	18	2320 E	2335		S11	W27	4368	15 D	1	2	2320	4.00	5.00			
MEUDON	20	1444	1505 D	1505	N28	E50	4381	21 D	2		1505		20.00			Slow S-SWF
SYDNEY	21	0504	0517	0511	N16	E41		13	2	3	0511	6.00	9.00			
ONDREJOV	22	1336 E	1349		S23	W31	4372	13 D	1	3	1340			2.00		
KYOTO	23	0140	0146		S16	E45	4384	6	1		0140				100	
SYDNEY	23	0443	0558 D	0521	N21	W17	4376	75 D	1	2	0521	3.00	4.00			
TASHKENT	23	0520 E	0540		N20	W16	4376	20 D	1	1	0522	4.70	9.20	2.00		
MEUDON	23	0908	1010 D		S22	W47	4372	62 D	1&				10.00			
ONDREJOV	23	0915 E	1016		S25	W44	4372	61 D	2	3	0915			3.00		Slow S-SWF
NEDERHORST	23	0919	0945 D		S25	W47	4372	26 D	2	2						
UTRECHT	23	0930	0932		S25	W25	4378	2	2	2						
ONDREJOV	23	1327 E	1334 D		S19	E34	4384	7 D	1	2	1329			2.50		
SYDNEY	24	0330	0511	0413	S22	W54	4372	101	2	2	0413	4.00	7.00			
ABASTUMANI	24	0559	0921 D	0727	S24	W57	4372	202 D	1	3		7.20	6.00			
MEUDON	24	0900	0930	0910	S22	W60	4372	30	1		0910		4.00			
ONDREJOV	24	1213 E	1217		S19	E20	4384	4 D	1	3	1213			2.60		
MEUDON	24	1315	1420	1326	S20	E27	4384	65	1&		1326		10.00			G-SWF
ONDREJOV	24	1319 E	1400	1325	S18	E24	4384	41 D	2	3	1325			3.80		
VOROSHILOV	25	0035 E	0135 D	0039	N25	W14	4381	60 D	3&	2	0040	21.20	26.10		260	
ABASTUMANI	25	0819	0827	0822	S19	E09	4384	8	1&			3.60	1.60			
ABASTUMANI	25	0835	0929 D	0842 U	S12	W35	4378	54 D	1&		0850	7.20	5.00	2.20		
SCHAUINS	25	0915 E	1100		S24	W69	4372	105 D	3	2						
MEUDON	25	0931	1045	1003	S23	W70	4372	74	3-		1003		50.00			
SIMEIZ	25	0933 E	1107	1002	S25	W69	4372	94 D	2&	1	0951	8.73	23.40	4.60	100	
NEDERHORST	25	0936	1050 D		S25	W70	4372	14 D	2&	3						S-SWF
UTRECHT	25	0938	0943		¤		4372	5	2	2						
ABASTUMANI	25	0939 E	1050 D		S23	W70	4372	71 D	3-		0943			2.90		
STOCKHOLM	25	0944 E	1040 D		S22	W70	4372	56 D	2&	2						
MEUDON	25	0956	1025	1007	N25	W50	4376	29	1		1007		5.00			
NEDERHORST	25	0959 E	1025 D		N24	W52	4376	26 D	1	3						
UTRECHT	25	0959	1108		¤		4376	9	2&	2						
ABASTUMANI	25	1014 E	1050 D		N25	W51	4376	31 D	2-		1019			2.30		
ONDREJOV	25	1006 E	1030	1007	S22	W70	4372	24 D	2&	2	1007			4.80		
KODAIKNL	25	1010 E			S25	W73	4372		2	1						
SCHAUINS	25	1205 E	1300		S21	E10	4384	55 D	2	2						S-SWF
ONDREJOV	26	0737 E	0747		N20	E52	4387	10 D	1	3	0739			2.60		

SOLAR FLARES

JANUARY 1958

OBSERVATORY	DATE JAN 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
ONDREJOV	26	0918	0945	0925	S10	E24	4384	27	2	3	0925			3.10		Slow S-SWF
ONDREJOV	26	1013 E	1017	1014	N20	E52	4387	4 D	1&	3	1014			3.90		
ONDREJOV	26	1017	1023	1017	S26	E16	4385	6	1	3	1017			2.60		
ONDREJOV	26	1316	1326	1317	S10	E22	4384	10	1	3	1317			2.60		
ALMA-ATA	27	0546 E	0618 D	0551	S04	W60	4378	32 D	2	3			14.60			
ALMA-ATA	27	0549 E	0615 D	0554	S07	W59	4378	26 D	1&	3			7.10			
ABASTUMANI	27	0727 E	0905 D	0756 U	S10	E12	4384	98 D	1&	3	0833	6.00	3.00	2.10		Slow S-SWF
ONDREJOV	27	1052 E	1107		S09	E11	4384	15 D	1	3	1056			2.40		
ONDREJOV	27	1356 E	1405		S14	W65	4378	9 D	1	3	1401			2.20		
ONDREJOV	28	1207 E	1216		S09	W05	4384	9 D	1	3	1208			2.20		
ONDREJOV	28	1344 E	1404		N19	E40	4388	20 D	1	3	1351			2.30		
ONDREJOV	29	1200 E	1206		N15	E33	4388	6 D	1	2	1200			2.60		
SCHAUINS	29	1200	1207		N16	E34	4388	7	1	2			2.00	2.60		
ONDREJOV	29	1352 E	1406		N24	W13	4386	14 D	1	2	1355			2.10		
ONDREJOV	29	1412 E	1419		N14	E31	4388	7 D	1	2	1413			2.10		
CAPRI-G	30	1551 E	1605 D		S19	W55	4382	14 D	1	2	1553		5.00			
MOSCOW-G	31	1148 E	1336 D	1224	N20	W10	4387	108 D	2&	1	1223	13.10	14.70	14.70	420	
MEUDON	31	1205 E	1415	1224	N20	W16	4387	130 D	2		1224		25.00			G-SWF
CAPRI-G	31	1347 E	1420 D		N18	W11	4387	33 D	2	1			7.00			

COMMERCE - STANDARDS - BOULDER

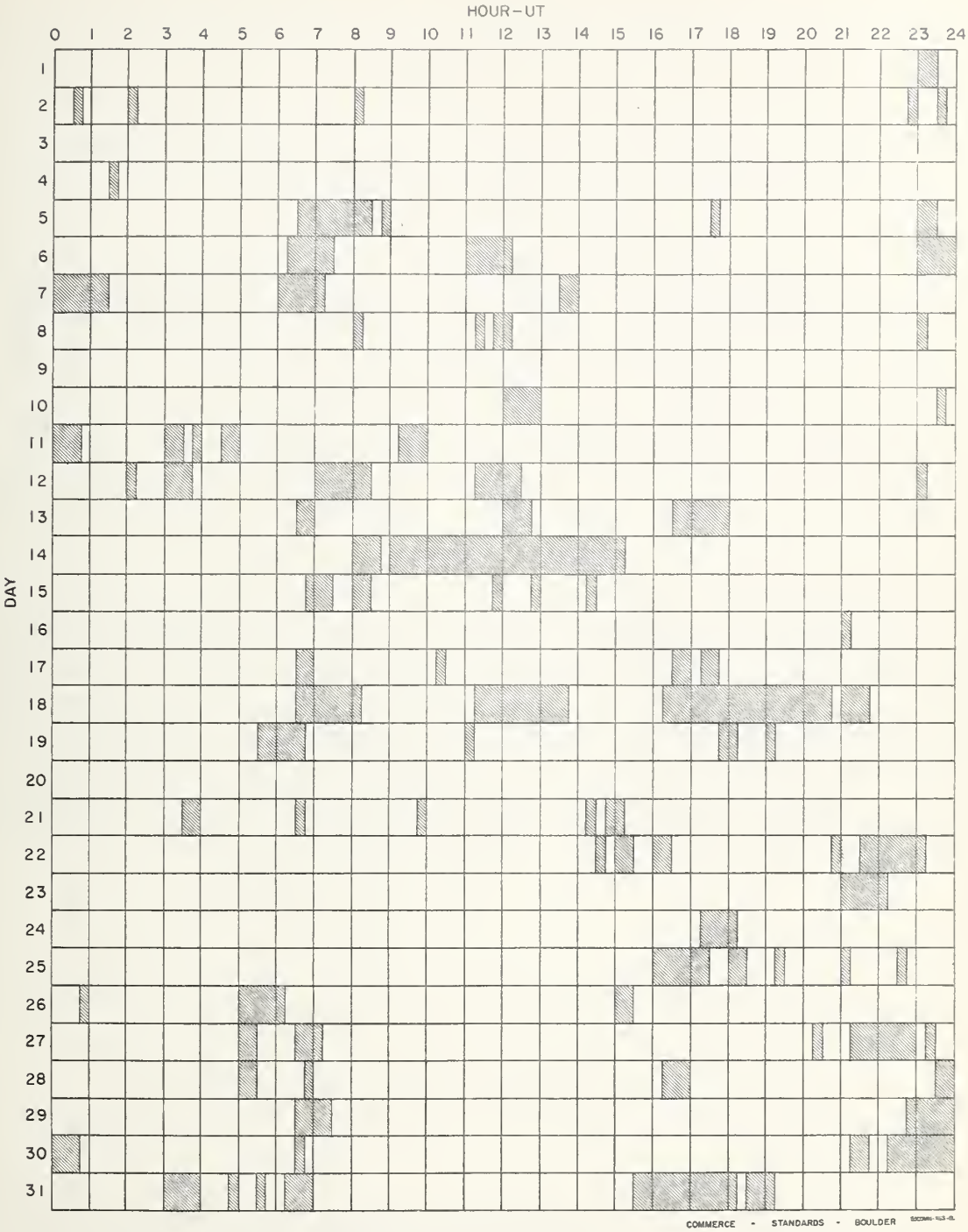
CAPRI G	ANACAPRI - GERMAN
CAPRI S	ANACAPRI - SWEDISH
GOOD HOPE	ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV*	KIEV UNIVERSITY
KODAIKNL	KODAIKANAL
KRASNYA	KRASNYA PAKHRA
MOSCOW	NIZMIR
MOSCOW-G	MOSCOW - GAISH
R O EDIN	ROYAL OBSERVATORY, EDINBURGH
R O HERST	GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
SAC PEAK	SACRAMENTO PEAK
SCHAUINS	SCHAUINSLAND
USNRL	UNITED STATES NAVAL RESEARCH LABORATORY

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

E - LESS THAN
D - GREATER THAN
U - APPROXIMATE
& - PLUS
\- MINUS
□ - NOT REPORTED

INTERVALS OF NO FLARE PATROL OBSERVATIONS

JANUARY 1958



Times indicated are accurate to the nearest 15 minutes.

Stations included:

Abastumani
Alma-Ata
Anacapri (Swedish)
Arcetri
Arosa
Athens
Climax
Dunsink
Hawaii
Huancayo
Ikomasan
Kharkov
Kiev GAO
Kiev University
Kodaikanal
Krasnaya Pakhra
McMath
Mitaka
Meudon
Moscow University
Nederhorst den Berg
Nizamiah
Ondrejov
Ottawa
Royal Greenwich Observatory, Herstmonceux
Royal Observatory, Edinburgh
Sacramento Peak
Simeis
Sydney
Tashkent
Uccle
Utrecht
U. S. Naval Research Laboratory
Voroshilov
Zurich.

SOLAR FLARES

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OBSERVATORY	DATE FEB 1958	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEASUREMENTS MEAS. AREA Sq. Deg.	MEASUREMENTS CORR. AREA Sq. Deg.	MEASUREMENTS MAX. WIDTH Hα	MEASUREMENTS MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
VOROSHILOV	01	0143 E	0203 D	0145	S13	E70	4400	20 D	1&	3	0145	3.50	8.50		122	
VOROSHILOV	01	0202 E	0210 D	0206	N28	E74	4399	8 D	1&	3	0206	7.00	25.90		140	
CAPRI-G	01	1047 E	1120 D		S05	W06	4391	33 D	1&	1			5.00			
CAPRI-G	01	1047 E	1246 D		S12	E61	4400	119 D	1&	1			6.00			
CAPRI-G	01	1306 E	1323 D		S17	W81	4382	17 D	1	1			4.00			
CAPRI-G	01	1306 E	1323 D		S11	W59	4384	17 D	1	1			3.00			
CAPRI-G	01	1325 E	1330 D		S25	E11	4397	5 D	1&	1			5.00			
VOROSHILOV	02	0114 E	0126 D	0120	S10	E80	4404	12 D	1&	1	0120	5.00	19.00		98	
ARCETRI	02	0903	0930		S30	E01	4397	27	1	1						
KRASNAYA	02	0915 E	1000 D	0923	S07	W20	4391	45 D	1&	1	0923	6.93	3.60		66	
CAPRI-G	02	1319 E	1337		S05	W17	4391	18 D	1	3			3.00			
CAPRI-G	02	1443 E	1516		S19	W90	4382	33 D	1&	3						
CAPRI-G	02	1514 E	1525 D		S19	E90	4404	11 D	1	3						
CAPRI-G	02	1533 E	1540 D		S06	W21	4391	7 D	1	3			3.00			
SYDNEY	03	0116	0143	0130	N26	E90	4405	27	□	1	0130	1.50				
SYDNEY	03	0409	0418	0412	S06	W76	4384	9	1	2	0412	.50	2.00			
SYDNEY	03	0513	0549	0521	S06	W26	4391	36	1	2	0521	3.00	4.00			
CAPRI-G	03	1009	1030 D		S12	E33	4400	21 D	1	2			2.00			
NEDERHORST	03	1119 E	1128 D		S11	E32	4400	9 D	1	3						
CAPRI-G	03	1438 E	1448 D		S12	E32	4400	10 D	1&	3			4.00			
SYDNEY	03	2238 E	2345		S17	E52	4402	67 D	1	2	2238	1.50	2.00			
SYDNEY	03	2241	2251	2249	N20	E52	4403	10	1	3	2249	1.00	2.00			
SYDNEY	03	2302	2306	2304	S17	E71	4404	4 D	1	2	2304	1.00	4.00			
SYDNEY	04	0034	0116		S12	E58	4402	42	1	2	0058	1.00	2.00			
KYOTO	04	0128	0210		S13	E28	4400	42	1		0128			1.66	120	
CAPRI-G	04	1426	1434 D		S13	E17	4400	8 D	1	3			3.00			
CAPRI-G	04	1426	1456		N11	E09	4395	30	1	3			4.00			
CAPRI-G	04	1452	1510 D		S13	E17	4400	18 D	1	3			2.00			
SCHAUINS	04	1504	1518		S12	E20	4400	14	1	2			2.00	2.30		
SYDNEY	04	2353	0008	2356	S16	W64	4391	15	1	2	2356	1.00	3.00			
KRASNAYA	05	0805 E	0854 D	0812	N29	W62	4388	49 D	1	2	0812	2.00	2.40		63	
KRASNAYA	05	0805 E	0854 D	0852	N29	W62	4388	49 D	1	2	0852	2.07	2.48		66	
VOROSHILOV	06	0200 E	0214 D	0207	N11	E04		14 D	1	2	0207	3.00	3.00		77	
VOROSHILOV	06	0200 E	0236 D	0214	N13	E39		36 D	1&	3	0217	2.20	3.00		158	
ABASTUMANI	06	0845 E	0901	0849	S12	W07	4400	16 D	1	3		5.30	2.50			
CAPRI-G	06	1102 E	1107 D		N26	W08	4399	5 D	1	1			2.00			
CAPRI-G	06	1203 E	1212		S10	W09	4400	9 D	1	1			3.00			
CAPRI-G	06	1203 E	1216		S20	E40	4404	13 D	1	1			4.00			
CAPRI-G	06	1514 E	1533		S17	E27	4402	19 D	1	2			2.00			
VOROSHILOV	08	0109 E	0215 D		S11	W33	4400	66 D	1&	2	0119	1.90	2.20		158	
VOROSHILOV	08	0136 E	0225 D	0140	S19	E19	4400	49 D	1&	2	0104	2.50	2.70		140	
VOROSHILOV	08	0240 E	0314 D		S12	W34	4400	34 D	2	2	0302	6.30	7.50		175	
VOROSHILOV	08	0312 E	0330 D		S18	E21	4400	18 D	2	2	0316	9.70	10.60		157	
TASHKENT	08	0502 E	0708	0535	S19	E15	4400	126 D	1&	3	0539	10.90	11.00	2.70	60	
ABASTUMANI	08	0647 E	0751 D	0720	N11	E25		64 D	1	2		2.30	1.10			
ABASTUMANI	08	0730	0751 D		N18	W09	4403	21 D	1&							
ABASTUMANI	08	0751 E	0751 D		S20	W23	4400	D	1&							

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KIEV	08	0855 E	0908	0904	N29	E24	4405	13 D	1	3	0904	2.60	3.50		70	
KIEV	08	1013	1039 D	1035	S19	E11	4400	26 D	1	3	1035	2.60	2.60		60	
KIEV	08	1022	1034	1029	S11	W40	4400	12	1	3	1029	1.80	2.30		73	
KIEV*	08	1109 E	1140 D	1117	S20	E13	4400	31 D	1	2		2.10	2.20			S-SWF
CAPRI-G	08	1415 E	1425		S17	W36	4400	10 D	1	2			2.00			
CAPRI-G	08	1524 E	1545 D		S12	W36	4400	21 D	1&	1			6.00			
CAPRI-G	08	1524 E	1545 D		S19	E14	4400	21 D	1	1			5.00			
MCMATH	08	1634	1649	1636	S12	W40	4400	15	1							
MCMATH	08	1758	1915		S18	E08	4400	77	2							G-SWF
KYOTO	08	2335 E			S09	E10	4400		1		2335	2.40				
VOROSHILOV	09	0120 E	0200 D	0140	N04	W63	4395	40 D	1&	2	0150	4.20	8.80		120	
VOROSHILOV	09	0212 E	0306 D		S19	E06	4400	54 D	2	2	0117	6.60	6.80		200	Slow S-SWF
ALMA-ATA	09	0546 E	0609 D	0559	US25	E01	4400	223 D	1&	3	0559	3.86	U.0		95	S-SWF
TASHKENT	09	0600	0611		S20	E01	4400	11	1&	3	0601	6.60	6.70	3.00	65	
ALMA-ATA	09	0654 E	0720 D	0659	US12	W48	4400	26 D	2&	3	0659	2.41	20.50		103	
TASHKENT	09	0658	0734	0659	S12	W47	4400	36	1	3	0659	5.10	7.20	3.80	95	S-SWF
ALMA-ATA	09	0743 E	0748 D	0744	US10	W55	4400	65 D	2&	3	0744	1.45	21.50		85	
MCMATH	09	1337 E	1459		S20	W02	4400	82 D	1&							S-SWF
MCMATH	09	1416	1440	1420	S12	W55	4400	24	1							S-SWF
KIEV	10	1104	1155	1125	S15	W64	4400	51 D	1&	2	1122	6.10	12.70		84	
CAPRI-G	10	1115 E	1150		S15	W60	4400	35 D	1&	2			6.00			
ONDREJOV	10	1122 E	1158	1124	S17	W60	4400	36 D	2	3	1124			4.20		
MOSCOW-G	10	1129 E	1200 D		S31	W63	4400	31 D	1	2	1141	2.55	5.70	1.90	140	
CAPRI-G	10	1206 E	1215 D		S17	W02	4400	9 D	1	3			2.00			
CAPRI-G	10	1230 E	1233 D		¤			3 D	1	3			2.00			
CAPRI-G	10	1320 E	1411	1335	S15	W62	4400	51 D	2	2			10.00			
NEDERHORST	10	1323 E	1340		S13	W65	4400	17 D	2	2						S-SWF
ONDREJOV	10	1331 E	1403		S13	W65	4400	32 D	2&	1	1333			4.80		
SCHAUINS	10	1348 E	1406		S16	W62	4400	18 D	1	2			4.00	2.10		
UTRECHT	10	1336			N06	W54			2	1						
CAPRI-G	10	1517 E	1522 D		N18	E42	4410	5 D	1	2			3.00			
SYDNEY	10	2324	0000	2327	S29	W20	4400	36	1	2	2327	3.00	3.00			
SYDNEY	11	0013	0030	0016	N08	E28	4410	17	2	2	0016	4.00	5.00			
KYOTO	11	0145	0224 D	0207	N09	E29	4410	39 D	1		0207	9.70		2.16	120	
ALMA-ATA	11	0525 E	0721 D	0635	UN10	E25	4410	116 D	2	3	0635	3.85	6.00		88	
ALMA-ATA	11	0730 E	0744 D	0736	UN15	W09	4405	14 D	1&	3	0736	1.92	2.80		81	
TASHKENT	11	0749 E	0805		S19	W27	4400	16 D	1	1	0752	4.00	4.50	1.10	75	
ALMA-ATA	11	0812 E	0845 D	0823	US01	W85	4400	33 D	2&	3	0823	1.94	14.40		104	S-SWF
KRASNAYA	11	0831 E	0836 D	0833	S09	W85	4400	5 D	1	1	0833	2.52	1.84		66	
CAPRI-G	11	0915 E	0955		N12	E23	4410	40 D	1	2			3.00			
KRASNAYA	11	0918 E	0954 D	0926	N10	E25	4410	36 D	1	1	0926	2.43	1.46		62	
KIEV	11	0941	1035	1009	S17	W48	4400	54	1	3	1009	.88	1.09		59	
CAPRI-G	11	1000 E	1025 D		S18	W45	4400	25 D	1	1			4.00			
ONDREJOV	11	1006	1011		S18	W45	4400	5	1	3	1006			1.90		
KIEV	11	1019	1026	1019	N17	E28	4410	7	1	3	1019	.88	1.16		52	
SYDNEY	11	2237	2247	2242	S18	W86			¤	2	2242	1.00				
SYDNEY	12	0150	0229	0201	S21	W45	4400	39	2	2	0201	4.00	5.00			
ALMA-ATA	12	0604 E	0702 D	0640	US18	W24	4400	58 D	1&	3	0640	1.93	7.30		69	
ALMA-ATA	12	0610 E	0659 D	0640	US18	W27	4400	49 D	1&	3	0640	1.46	6.20		60	

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ABASTUMANI	12	0613 E	0905	0644	S16	W27	4400	172 D	1	3		4.70	2.30			
ONDREJOV	12	0839 E	0847 D		S15	W30	4400	8 D	1	2	0840			1.60		
SCHAUINS	12	0841 E	0850		S16	W29	4400	9 D	1	2			4.00	2.20		
ARCETRI	12	0843 E	0850 D		S21	W36	4400	7 D	1	3	0850	1.90	2.40			
CAPRI-G	12	0905 E	0926 D		N12	W05	4412	21 D	1	2			3.00			
ONDREJOV	12	0909	0927 D		N09	W02	4412	18 D	1	1	0913			2.30		
SCHAUINS	12	0928 E	0940		N09	W02	4412	12 D	1	2			3.00	2.30		
UTRECHT	12	0937	0940		S19	W35	4400	3	1	2						
SCHAUINS	12	0937	1007	0940	S22	W35	4400	30	2	2			6.00	3.40		
CAPRI-G	12	0937 E	1012 D		S21	W36	4400	35 D	2	2			10.00			
NEDERHORST	12	0940	0955 D		S21	W35	4400	15 D	2	2						
CAPRI-G	12	1008 E	1012 D		N11	E10	4410	4 D	1	2			3.00			
SCHAUINS	12	1129 E			S17	W44	4400		1	2			3.00	3.20		
CAPRI-G	12	1217 E	1222 D		N16	E17	4410	5 D	1	3			3.00			
CAPRI-G	12	1354 E	1359 D		S14	W51	4400	5 D	1	2			4.00			
CAPRI-G	12	1546 E	1557 D		N10	E07	4410	5 D	1	1			4.00			
ABASTUMANI	13	0607 E	0824	0627	N11	W03	4410	137 D	1&	3		6.80	3.20			
ABASTUMANI	13	0743 E	0851	0847	S14	W43	4400	68 D	1			2.70	1.70			
CAPRI-G	13	0835 E	0853		S17	W44	4400	18 D	1	3			3.00			
CAPRI-G	13	1018 E	1110		S18	W51	4400	52 D	2	1			8.00			
SYDNEY	14	0419	0440	0424	N25	E57	4417	21	1	2	0424	2.00	4.00			
CAPRI-G	14	1223 E	1231		S16	W57	4400	8 D	1	2			2.00			
CAPRI-G	14	1235 E	1240 D		N10	W32	4412	5 D	1	2			2.00			
KYOTO	15	0158	0216 D		S15	W67	4400	18 D	1		0158			1.32	110	
ALMA-ATA	15	0457 E	0534 D	0513	UN10	W35	4410	37 D	1	1	0513	1.94	3.30		77	
TASHKENT	15	0504 E	0540		N11	W29	4410	36 D	1	2	0509	6.60	7.80	2.00	55	
ALMA-ATA	15	0639 E	0657 D	0649	UN07	W37	4410	18 D	2	2	0549	3.38	6.90		89	
TASHKENT	15	0648	0705		N10	W29	4410	17	1	2	0653	8.00	9.40	1.50	50	
TASHKENT	15	0711	0732	0714	S17	W71	4400	21	1	2		1.50	4.10			
SCHAUINS	15	1309 E	1323		N09	W30	4410	14 D	1	2			3.00	3.10		
SIMEIZ	16	0757	0829	0801	N21	W42	4410	32	1&	2	0802	6.11	12.00	4.00	70	
ALMA-ATA	16	0816 E	0830 D	0823	UN20	W34	4410	14 D	1&	3	0823	2.80	4.50		82	
ONDREJOV	18	0708 E	0715	0710	N10	W65	4410	7 D	1	3	0710			3.20		
MCMATH	18	1620	1710	1630	S12	W02	4422	50	1&							
VOROSHILOV	19	0128 E	0358		N11	W80	4410	150 D	1&	2	0356	1.09	5.70		75	
ONDREJOV	19	1232 E	1253		N07	W19	4421	21 D	1	2	1240			1.90		
VOROSHILOV	20	0340 E	0345	0341	S10	E47	4428	5 D	1&	1	0341	1.74	2.45		92	
CAPRI-G	20	0914 E	0917 D		N33	E90	4435	3 D	1	2						
CAPRI-G	20	1500 E	1510 D		N13	E23	4430	10 D	1	3			3.00			
KIEV	21	0850 E	0911	0853	N12	E11	4430	21 D	1	2	0853	2.57	2.90		56	
KYOTO	23	0103 E			N31	E70	4435		1		0103	6.70				
KYOTO	23	0445 E	0454 D		S12	E06	4428	9 D	1		0445				100	
TASHKENT	23	0915 E			S14	E01	4428		1&	1	0915	7.79	8.00			
ONDREJOV	23	1224 E	1233		S20	W32	4431	9 D	1	3	1228			2.40		

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CAPRI-G	23	1433 E	1520 D		S22	W28	4431	47 D	1	1			3.00			
SYDNEY	24	0505	0517	0508	S08	W09	4428	12	1	1	0508	3.00	3.00			
TASHKENT	24	0509 E	0527		S10	W08	4428	18 D	1	3	0512	5.66	6.00	2.10	60	
SYDNEY	24	0547	0623	0552	S32	E19	4432	36	1	1	0552	2.00	2.00			
TASHKENT	24	0555 E	0615		S31	E19	4432	20 D	1	3	0557	2.83	3.00	1.50	55	
KIEV	24	1036	1121	1044	N30	E58	4435	45	1&	3	1044	2.57	6.70		74	
CAPRI-G	24	1047 E	1145 D		N32	E52	4435	58 D	2	1			7.00			
CAPRI-G	24	1047 E	1105 D		N15	E90	4440	18 D	1	1						
CAPRI-G	24	1155 E	1210 D		S31	E17	4432	15 D	1	1			3.00			
CAPRI-G	24	1206	1210 D		S24	E83	4438	4 D	1	1			4.00			
CAPRI-G	24	1225 E	1238		S17	W27	4426	13 D	2	1			7.00			
CAPRI-G	24	1238 E	1247 D		S05	W55	4425	9 D	1	1			3.00			
CAPRI-G	24	1255 E	1300 D		S13	E12	4436	5 D	1	2			3.00			
CAPRI-G	24	1352 E	1357 D		S18	W40	4431	5 D	1	2			5.00			
SYDNEY	25	0055	0130	0109	S20	W50	4431	35	1	2	0109	3.00	5.00			
SYDNEY	25	0325	0354	0332	S20	W50	4431	29	1	2	0332	3.00	4.00			
SYDNEY	25	0500 E	0612	0529	S28	W25	4427	72 D	3	1	0529	12.00	14.00			
KYOTO	25	0507 E	0555 D	0515	S25	W25	4427	48 D	1&		0515	8.30		2.50	120	S-SWF
TASHKENT	25	0539 E	0630		S27	W22	4427	51 D	2	3	0540	30.00	36.00	1.80	55	
ONDREJOV	25	0743 E	0758 D		S12	E01	4436	15 D	1	1	0744			1.90		
KIEV	25	0825 E	0907	0825	S33	E04	4432	42 D	1	2	0825	.86	.99		63	
ONDREJOV	25	1125 E	1135		S05	W35	4426	10 D	1	2	1126			2.00		
ONDREJOV	25	1130 E	1209		S12	W01	4436	39 D	1	2	1131			2.40		
MCMATH	25	1955	2125 D		S15	W50	4426	90 D	2							Slow S-SWF
SYDNEY	25	2330	0021	2339	S37	W27		51	1	2	2339	3.00	4.00			
SYDNEY	26	0432	0503	0436	S16	W56	4426	31	2	2	0436	6.00	11.00			G-SWF
SYDNEY	26	0527	0632	0552	S20	W59	4431	65	2	2	0552	5.00	10.00			Slow S-SWF
MOSCOW-G	26	1132 E	1202	1135	S18	W59	4426	30 D	2	1	1136	9.17	17.80	2.30	130	
VOROSHILOV	27	0115	0124 D		S15	W22	4436	9 D	1&	1	0123	4.78	5.32		80	
VOROSHILOV	27	0250	0355	0257	S32	W14	4432	65	1&	1	0257	2.00	2.37		80	
SYDNEY	27	0312	0354	0326	N35	E24	4435	42	2	1	0326	3.00	5.00			
VOROSHILOV	27	0317	0355	0328	N34	E18	4435	38	2	2	0328	4.10	6.30		176	Slow S-SWF
VOROSHILOV	27	0317	0355	0328	N35	E24	4435	38	2	2	0328	4.10	6.30		176	
UTRECHT	27	1228 E	1231		S16	W25	4436	3 D	2	2						S-SWF
SCHAUINS	28	0724 E	0744 D		S13	W35	4436	20 D	1	2			4.00			
ONDREJOV	28	0757	0817	0759	S14	W32	4436	20	2	3	0759			5.30		
SIMEIZ	28	0800	0825	0804	S13	W34	4436	25	2	1	0803	5.25	7.50	4.70	120	
SCHAUINS	28	0805 E	0816 D		S13	W33	4436	11 D	1&	2			5.00	4.00		
ONDREJOV	28	1015 E	1045		N40	E20		30 D	1	3	1026			2.00		
ONDREJOV	28	1122 E	1126		S13	W35	4436	4 D	1	3	1122			2.50		

Positions of Alma-Ata flares changed from those reported on assumption Stonyhurst disc was inverted on original scaling; U signifies position uncertain.

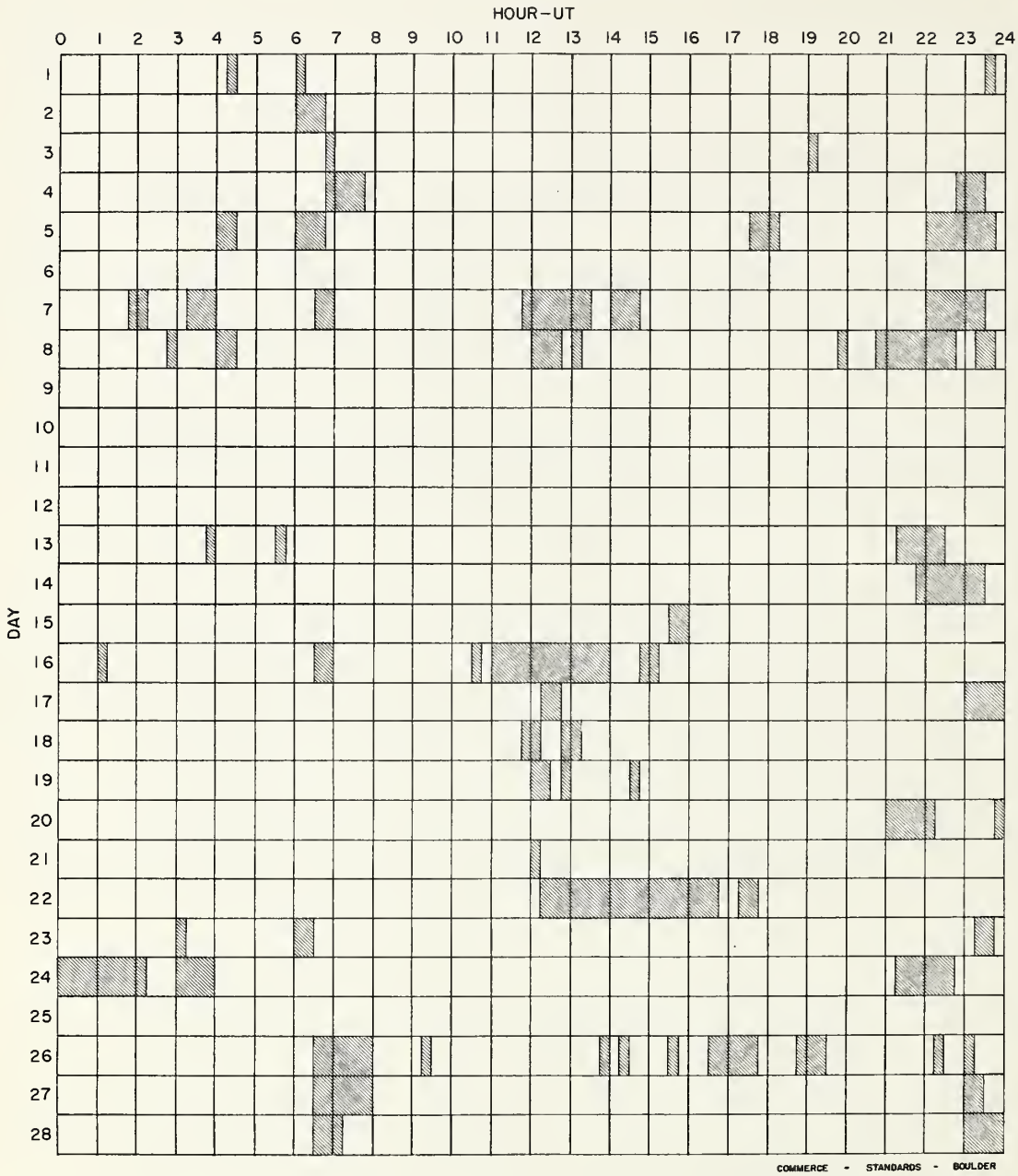
CAPRI C ANACAPRI - CERMAN
CAPRI S ANACAPRI - SWEDISH
CAPE HOPE ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV* KIEV UNIVERSITY
KODAIKNL KODAIKANAL
KRASNYA KRASNYA PAMIRA
MOSCOW NIZMIR
MOSCOW-G MOSCOW - CAISH
R O EDIN ROYAL OBSERVATORY, EDINBURGH
R O HERST GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
SAC PEAK SACRAMENTO PEAK
SCHAUINS SCHAUINSLAND
USNRL UNITED STATES NAVAL RESEARCH LABORATORY

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

E - LESS THAN & - PLUS
D - GREATER THAN - - MINUS
U - APPROXIMATE □ - NOT REPORTED

INTERVALS OF NO FLARE PATROL OBSERVATIONS

FEBRUARY 1958



Times indicated are accurate to the nearest 15 minutes.

Stations included:

Abastumani
Alma-Ata
Anacapri (Swedish)
Arcetri
Athens
Climax
Dunsink
Hawaii
Huancayo
Ikomasan
Kharkov
Kiev GAO
Kiev University
Kodaikanal
Krasnaya Pakhra
McMath
Meudon
Mitaka
Moscow University
Nederhorst den Berg
Nizamiah
Ondrejov
Ottawa
Royal Greenwich Observatory
Herstmonceux
Royal Observatory,
Edinburgh
Sacramento Peak
Simeis
Sydney
Tashkent
Uccle
Utrecht
U. S. Naval Research
Laboratory
Voroshilov
Zurich.

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)

AUGUST 1958

Aug. 1958	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F 169B
1	0737	0804	Slow S-SWF	4	1	NE, OK	0737E
1	1202	1310	Slow S-SWF	5	2	BE, JU, MA, MC, NE, PR, PU, SW	1136E
2	0744	0827	S-SWF	3	1+	JU, NE	0754
2	1200	1259	S-SWF	1	2+	DA	1200E
2	1840	2113	S-SWF	5	3+	AN, BE, FM, HU, LA, MC, PR, WS	
3	0507	0528	S-SWF	4	1+	NE, OK	0515E
3	0834	0852	S-SWF	1	2	PU	0831
3	0909	1011	S-SWF	4	2	JU, NE, PU	0902
3	2142	2205	Slow S-SWF	5	1	AD, BE, FM, LA, MC, WS	2142
4	0422	0558	G-SWF	1	3	OK	0421
4	0725	--	Slow-S-SWF	5	1	KO, NE, OK	0723E
	0740	0800	S-SWF	5	2	DA, JU, NE, OK, PU	0741
5	0837	0853	Slow S-SWF	1	2	KO	0836
6	1516	1555	G-SWF	4	1	FM, HU, MC, PR	1518
7	0043	0100	Slow S-SWF	4	1	AD, OK	
7	0644	0720	G-SWF	4	2	OK, PU	0642
7	1500	1645	S-SWF	5	3+	BE, DA, FM, HU, JU, LA, MA, MC, NE, PA, PR, PU, SW, WS, CW***	1457
8	1340	1440	G-SWF	3	1	BE, MC	1330
9	0350	0430	S-SWF	5	2	AD, KO, NE, OK, TO, CW+	0342
9	1600	1630	G-SWF	3	1-	HU, MC, PR	1600
10	1755	1910	G-SWF	3	1+	HU, MC	*
11	0850	0905	S-SWF	1	1	NE	0845E
11	1014	1050	Slow S-SWF	1	2	NE	1009
11	1455	1550	S-SWF	5	2+	BE, FM, HU, JU, MC, NE, PR, PU, WS	1450
12	0421	0533	Slow S-SWF	5	2	NE, OK, CW+	0424
12	0712	0735	S-SWF	4	1+	OK, PU	0655
13	0113	0209	S-SWF	3	2-	OK, TO	
13	0923	1020	S-SWF	5	3-	BE, DA, JU, KO, MA, NE, PU, SW, CW***	0927E
13	1208	1250	S-SWF	5	2+	BE, DA, JU, MC, NE, PR, SW, CW***	1206E
13	1532	1555	S-SWF	5	2	BE, FM, HU, JU, MC, NE, PR, PU	1525
14	1242	1320	S-SWF	5	2	BE, FM, JU, MC, NE, PR, PU	1220
14	1613	1705	Slow S-SWF	5	2-	BE, FM, HU, MC, NE, PR, PU, WS	1605
14	1801	1848	Slow S-SWF	5	1+	AD, BE, FM, HU, MC, PR, WS	1839E
14	2152	2234	S-SWF	5	2+	AD, AN, BE, FM, LA, MC, PR, TO, WS	
15	1320	1346	S-SWF	3	1+	JU, PU	1320
16	0432	0720	S-SWF	5	3+	AD, JU, NE, OK, PU, TO, RCA+, CW***, CW++	0432F
16	1858	1918	S-SWF	3	1-	MC, PR	
18	0806	0900	Slow S-SWF	5	3-	JU, KU, NE, OK, PU, CW***	0747
18	1143	1226	S-SWF	3	2	KU, PU	
19	2130	2200	G-SWF	5	1	AD, BE, MC	2112
19	2200	2305	S-SWF	5	2	AD, BE, LA, MC, TO	
20	0042	0115	S-SWF	5	2+	AD, AN, CA, LA, OK, TO, RCA+, CW+	0042
20	2040	2130	Slow S-SWF	5	1+	AN, BE, FM, HU, MC, PR, WS	
21	0936	0946	S-SWF	1	2	JU	0909
22	0546	--	S-SWF	1	1	NE	0525E
22	0751	0820	S-SWF	4	2	JU, NE, PU	
22	1425	--	Slow S-SWF	5	1	BE, MC, PR	1417
	1435	1725	S-SWF	5	3+	BE, FM, HU, LA, MA, MC, NE, PR, SW, CW***	
23	1015	1038	Slow S-SWF	3	2-	NE, SW	1006E
23	1414	1445	S-SWF	5	1	HU, MC, PU	1406E
23	1652	1726	Slow S-SWF	5	1	BE, FM, HU, MC, PR	
25	0958	1043	S-SWF	1	2	PU	0950
26	0010	0410	Slow S-SWF	5	3+	AD, AN, LA, OK, TO, WS, RCA+, CW++	0005
28	1023	1125	S-SWF	5	3	MA, NE, PU, SW, CW***	1027E
28	1803	1855	S-SWF	4	1	BE, HU, MC, PR	1800
29	0222	0342	Slow S-SWF	1	2+	OK	
29	0916	0948	G-SWF	1	2	JU	0905
30	1034	1046	S-SWF	1	2	PU	1044E
30	1605	1635	S-SWF	5	1+	AN, BE, FM, HU, MC, PR, WS	1606E
31	0548	0612	G-SWF	1	1	OK	0505E

CA = Canberra, Australia
DA = Darmstadt, G.F.R.
FM = Ft. Monmouth, N.J.
JU = Julhlesruh, G.D.R.
KO = Kodaikanal, India
KU = Kuhlungsborn, G.D.R.
LA = Los Angeles, California
MA = Madrid, Spain
NE = Nederhorst den berg, Netherlands
PU = Prague, Czechoslovakia
SW = Enkoping, Sweden
TO = Hiraiso Radio Wave Observatory, Japan
CW* = Cable and Wireless, Barbadoes
CW** = Cable and Wireless, Somerton, England
CW*** = Cable and Wireless, Brentwood, England
CW+ = Cable and Wireless, Hong Kong
CW++ = Cable and Wireless, Singapore
RCA+ = RCA Communications Inc., Pt. Reyes, Calif.

SOLAR RADIO EMISSION

DAILY DATA

Daily Values Solar Flux
at 9530 Mc,
Washington, D.C.

Date	June 1958	July 1958	August 1958	September 1958
1		236	247	260
2	257	238		261
3	248	246		273
4			224	272
5			230	239
6			249	
7		231	253	
8		225	255	252
9	254	213		255
10		236		263
11		256	268	264
12	221		258	283
13	241		264	
14		243	261	
15		230	250	282
16	247	237	255	284
17	249	234		270
18	248	231	251	260
19	247		233	253
20	245		248	
21	219	236	252	
22		244	257	268
23	253	241	253	261
24	237	244		264
25	263	260	253	255
26		251	260	257
27	251		260	
28		290	261	
29		280	250	264
30	264	269	248	253
31		273		

Data recorded at U.S. Naval Research Laboratory,
Washington, D.C.

Flux given in units of 10^{-22} Watts/M^2/c/s.

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

Washington,D.C. JUNE 1958 9530 Mc.

June 1958	Type	IAU	Start UT	Duration Hrs.Mins	Maximum Time UT	Maximum Peak Flux	Observing Period UT	Remarks
3	Pre	CA	1509.4	0.8		68	1247-2025	
	Complex		1510.2	4.0	1510.5	286		
	Post Inc			31.7		17		
13	Complex	CD	1446.5	4.0	1448.6	34	1335-2015	
	Simple 2	SD	1713.0	2.0	1714.1	11		
17	Simple 2	ESD	1637.0	2.0	1637.3	19	1315-2045	
18	Simple 2	SD	1829.2X	3.7X	1830.2	42	1238-2030	
19	Complex	CD	1256.9	7.5	1302.8	35	1235-2031	
	Post Inc			13.8		7		
	Simple 1	SD			1331.1			very small rise
	Complex	CD	1437.7	6.4	1438.3	232		
	Post Inc			35.0		30		
20					1400.5		1233-2040	comparable rise to 9.4 CM, not measureable -- equipment out of order
24					1334.5		1245-2036	very small rise
25	Simple 2	SD	1626.8	5.0	1627.7	20	1230-2045	

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

Washington,D.C. JULY 1958 **9530 Mc.**

July 1958	Type	IAU	Start UT	Duration Hrs:Mins	Maximum Time UT	Maximum Peak Flux	Observing Period UT	Remarks
1	Simple 2	ESD	1856.3	6.0	1857.1	11	1235-2030	
	Group (3)	F	1945.7					
	Simple 2	SD	1945.7	1.3	1946.7	13		
	Simple 2	ESD	1947.2	0.8	1947.3	23		
	Simple 2	SD	1948.3	1.0	1948.7	22		
3	Simple 2	ECA	2013.3	1.8	2013.5	17	1200-2224	
	Post Inc			<02 8.0		6		level remained up
7	Simple 3A	CA	1631.3	17.5	Indef.	10	1220-2030	
	Simple 2	SD	1636.3	1.1	1636.7	54		
	Complex	CD	1736.4	10.3	1740.2	142		
8	Simple 1	SD	1336.9	6.0	1338.8	7	1235-2038	
9	Simple 2	CA	1943.3	1.5	1944.0	19	1227-2035	
	Post Inc			24.0		8		
11	Simple 2	SD	1641.3	1.6	1642.2	20	1240-2030	
17	Simple 2	SD	1402.3	5.8	1404.5	21	1226-2025	
	Simple 2	SD	2001.9	5.8	2003.2	24		
23	Simple 3	SD	1309.6	01 20.5	Indef.	13	1234-2028	
	Simple 3	SD	1939.0	11.6	1946.8	36		
24	Absorption		1725.0	1.2	1725.5	12	1228-2042	
25	Burst (probably simple 2) ended at 1350.7, off on sky during rise and peak.							
26	Group (2)	F	1949.0	5.8			1333-2021	sun level remained high after group
	Simple 2A	CA	1949.0	1.6	1950.9	69		
	Simple 1A	ECA	1952.0	4.2	1952.5	6		
28	Simple 1	SD	1330.8	0.3	1331.0	6	1215-2059	
	Group (2)	F	1430.5	6.4				
	Simple 1	SD	1430.5	1.7	1431.2	6		
	Simple 2	SD	1432.2	6.4	1434.1	31		
	Simple 2	SD	1515.2	0.4	1515.6	12	1215-2059	
	Simple 2	ESD	2053.4	1.6	2053.6	14		
29	Complex	CA	1415.5	9.7	1421.2	55	1238-2254	
	Post Inc			54.4		23		
	Simple 3	ESD	2225.6	9.1	2226.3	17		
30	Simple 3	SD	1435.3	14.2	1438.3	10	1225-2054	
	Simple 3A	CA	1519.3	15.1	1528.7	289		
	Simple 2	SD	1525.5	1.0	1525.9	69		
	Simple 2	CA	1527.7	0.6	1527.9	196		
	Post Inc			Indef.		6		
	Complex	CA	2126.2	18.6	2136.6	208		
	Post Inc			56.0		46		
	Simple 2	ESD	1849.1	6.5	1850.1	39		

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

Washington, D.C. AUGUST 1958 9530 Mc.

Aug. 1958	Type	IAU	Start UT	Duration Hrs:Mins	Maximum Time UT	Maximum Peak Flux	Observing Period UT	Remarks
1							1228-2058	
4							1234-2020	
5							1238-1940	
6							1235-2031	
7	Simple 2	SD	1500.5	3.4	1503.1	84	1230-2030	
	Post Inc A			01 50.0		47		
	Simple 2	SD	1547.2	1.5	1547.8	35		
	Simple 2	SD	1920.7	4.5	1921.8	12		
8							1230-2046	
11	Simple 3	SD	1453.0	55.0	1510.5	23	1208-2045	
	Simple 2f	SD	1620.5	8.0	1622.4	34		
12	Simple 3	SD	1642.7	9.0	1644.3	11	1200-2053	
	Simple 1	SD	1933.2	7.3	1934.5	7		
13	Complex f	CD	1204.5	14.0	1209.8	225	1150-2050	
	Post Inc		0112.0			56		
	Simple 3f	SD	1530.2	19.5	1532.6	54		
14	Simple 2	SD	1421.8	1.0	1422.2	10	1135-2045	
15	Very slight rise			1308 - 1337			1232-2047	
16							1300-2241	
18							1232-2045	
19							1200-2045	
20	Simple 1	SD	1954.8	3.0	1955.1	7	1210-2053	
21							1132-2052	
22	Complex	CA	1427.0	02 38.0	1451.0	630	1124-2042	
	Gradual fall from peak to preburst level at 1705							
23	Complex	CD	1414.9	9.4	1420	102	1340-2050	
	Simple 2	SD	1654.7	2	1655.3	26		
25							1145-2045	
26							1228-1900	
27							1124-2252	Interference
28	Simple 2	ESD	1152.3	0.9	1152.6	15	1125-2035	
29							1335-2200	
30							1310-2216	

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

Washington, D.C. SEPTEMBER 1958 **9530 Mc.**

Sept 1958	Type	IAU	Start UT	Duration Hrs:Mins	Maximum Time UT	Maximum Peak Flux	Observing Period UT	Remarks
1					2056.6		1810-2300	very slight rise
2	Simple 2	SD	1802.0	7.0	1803.0	9	1442-2130	
	Simple 2	ESD	2004.0	1.5	2004.3	9		
	Complex	CDF	2103.0	4.7	2104.6	997		
	Post Inc			18.0		22		
3	Complex	ECD	1758.1	9.0	1800.2	34	1242-2245	
	Simple 3	SD	1923.5	30.0	1931.3	13		
					2056.5			very slight rise
4					1507.9		1342-2225	very slight rise
5							1244-2207	
8							1238-2045	
9							1232-2043	
10	Croup (2)		1423.4	18.6			1225-2100	
	Simple 2	SD	1423.4	4.0	1425.0	12		
	Simple 2	SD	1432.0	7.0	1436.5	10		
11							1237-2045	slight rise from 1407-1415 still up at end of period
	Simple 3	SD	2034.8	Indet	2037.8	16		
12	Simple 2	SD	1710.5	3.0	1711.0	11	1235-2038	
15	Simple 2f	SD	1407.2	5.3	1408.8	12	1246-2045	
	Simple 3	SD	1407.2	13.4	1441.1	12		
	precursor		1700.5	0.8		6.6		
	Simple 2	ESD	1701.3	1.1	1701.9	1237		
	Post Inc			58.0		86		
	Simple 3A	SA	1938.5	01 07.0	Ind	12		
	Simple 2	ESD	1942.0	0.2	1942.1	31		
	Simple 2	SD	2011.8	0.7	2012.2	49		
16	Simple 1	SD	1416.9	1.6	1417.2	7	1235-2037	
	Simple 3	SA	1444.8	01 17.0	1458.2	44		
17	Simple 3A	SD	1539.7	11.2	Ind	13	1233-2044	
	Simple 2	SD	1545.9	0.7	1546.3	39		
	Simple 2	ESD	1755.3	1.0	1755.7	14		
18	Simple 2	SD	1627.4	2.7	1628.0	21	1238-2042	
	Simple 2	SA	1701.5	4.0	1701.9	552		
	Simple	ESD	1851.1	1.3	1851.3	28		
19							1300-2042	
22							1140-2042	
23							1150-2039	
24	Simple 1	SD	1448.4	0.8	1448.8	7	1130-2030	
25	Simple 2f	SD		Ext.3.0	1442.7	13	1128-2108	not on sun at start of burst
26							1130-2044	
29	Simple	ESD	1141.3	0.7	1441.7	31	1135-2043	
	Post Inc			2.0		13		
30							1135-2039	

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION

DAILY DATA

Daily Values Solar Flux at 3200 Mc, Washington, D.C.				
Date	June 1958	July 1958	August 1958	September 1958
1		194	227	222
2	173	178		221
3	196	182		221
4			176	200
5			178	186
6			188	
7		193	206	
8		188	198	213
9	191	184		191
10		173		206
11		168	192	216
12	179		183	229
13	174		193	
14		154	193	
15		156	189	228
16	153	155	187	222
17	136	159		211
18	154	156	178	206
19	159	180	177	191
20	155		181	
21	167	174	192	
22		180	200	201
23	179	179	209	179
24	189	191		182
25	194	203	215	182
26	197	206	218	176
27	196		202	
28		249	201	
29		249	214	180
30	179	244	217	177
31		250		

Data recorded at U.S. Naval Research Laboratory.
Washington, D.C.

Flux given in units of 10^{-22} watts /M^2/c/s/.

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

Washington,D.C. JUNE 1958 **3200 Mc.**

June 1958	Type	IAU	Start UT	Duration Hrs:Mins	Maximum Time UT	Maximum Peak Flux	Observing Period, UT	Remarks
2	Complex	CD	1948.2	5:0X	1949.9	4	1314-2045	
3	Pre	CA	1509.1	1.1		74	1242-2025	
	Complex		1510.2	4.5	1510.6	208		
	Post Inc			33.3		11		
	Simple 2	SD	1933.7	1.0	1934.1	11		
13	Complex	CD	1446.5	7.5	1448.7	23	1335-2015	
	Simple 3	SD	1712.7	8.0	1714.1	12		
18	Simple 2	SD	1829.4X	3.5X	1830.3	45	1238-2030	
19	Croup (4)	F	1256.3	13.7			1235-2031	
	Simple 1	SD	1256.3	0.3	1256.4	2		
	Simple 2	SD	1257.1	1.9	1257.5	9		
	Simple 2	ESD	1302.3	6.9	1303.5	9		
	Simple 1	SD	1309.2	0.8	1309.5	4		
	Simple 2	SD	1329.1	4.5	1331.1	17		
	Simple 1	SD	1337.1	0.3	1337.2	2		
	Complex	CA	1437.9	6.2	1439.6	58		
	Post Inc			25.5		10		
	Simple 3	SD	1840.5	10.0	1845.2	6		
20	Simple 2	SD	1759.2	5.4	1802.1	9	1233-2040	
	Simple 2f	CD	1355.7	9.1X	1400.5	14		
23							1228-1940	Interference
24	Simple 1	SD	1334.0	1.0	1334.5	2	1245-2036	
25	Simple 3	SD	1625.9	20.0	1628.0	81	1230-2045	
26	Simple 3	SD	1554.0	19.0	1600.9	4	1250-2035	
	Simple 1	SD	1644.5	4.0	1646.7	2		
	Simple 3	SD	1758.0	8.0	1800.3	2		
30	Simple 3	SD	1346.7	20.0X	1350.6	4	1353-2040	

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

Washington, D.C. JULY 1958 **3200 Mc.**

July 1958	Type	IAU	Start UT	Duration Hrs:Mins	Maximum Time UT	Maximum Peak Flux	Observing Period UT	Remarks
1	Complex	CD	1537.0	3.6	1539.3	9	1240-2030	
	Simple 2	SD	1854.7	5.0	1856.8	10		
	Simple 1	SD	1911.8	3.2	1917.5	3.5		
	Group (2)	F	1945.3	4.7				
	Simple 2	SD	1945.3	2.6	1946.7	10		
	Simple 2	SD	1948.0	2.0	1948.7	10		
3	Simple 1	SD	1453.6	2.0	1454.4	4	1200-2224	
	Simple 1	ESD	1638.7	2.6	1639.0	6		
	Complex	CA	2006.9	8.4	2013.7	5		
	Post Inc			<02 08.0		13		Post burst level remained up
7	Simple 1	SD	1409.7	1.5	1410.4	4	1220-2030	
	Simple 3A	CA	1631.1	26.3	Indef.	18		
	Complex	CD	1636.3	1.5	1636.7	28		
	Complex	CA	1736.4X	6.0X	1739.9	93		
	Post Inc			<9.0		7		
8	Simple 3	SD	1332.9	18.7	1338.3	49	1235-2038	
	Simple 2	ESD	1504.3	0.2	1504.4	10		
	Simple 1	SD	1701.6	1.6	1702.3	6		
9	Simple 3	SD	1635.2	Indef.	1637.1	10	1227-2035	Heavy rain
	Simple 2f	CA	1942.8	3.0	1944.1	70		
	Post Inc			17.5		7		
11	Simple 2	SD	1641.5	1.5	1642.0	10	1240-2030	
15	Simple 1	SD	1732.5	6.3	1734.6	5	1244-2020	
17	Simple 2f	CA	1402.1	7.8	1404.5	17	1226-2025	
	Simple 2	SD	2000.6	5.0	2003.2	14		
	Post Inc			15.0		3		
19	Simple 1	SD	1723.9	3.6	1725.2	3	1340-2240	
	Complex	CA	1905.1	16.0	1907.7	516		
	Post Inc			01 14.0		24		
	Simple 2A	SD	2214.3	3.6	2215.5	34		
	Post Inc A			17.0		7		
21	Simple 3f	CD	1910.4	16.0	1913.5	30	1238-2050	
22	Simple 1		2023.7	0.3	2023.8	4	1245-2050	
23	Simple 3	ESD	1258.1	01 12.4	Indef.	38	1234-2028	
	Simple 3	ESD	1416.5	0.5	1416.8	6		
	Complex	CD	1944.8	7.6	1946.7	39		
24	Simple 1	SD	1509.2	0.2	1509.4	11	1228-2042	
	Simple 3	SD	1648.9	4.3	1654.6	5		
	Simple 1	ESD	1724.6	3.3	1725.5	7		
25	Simple 2	SD	1327.1	3.2	1329.1	12	1237-2051	
	Burst (probably simple 2) ended at 1350.7, off on sky during rise and peak.							
	Simple 1	SD	1417.0	1.2	1417.6	4		
	Simple 1	SD	1548.4	0.7	1548.6	4		
	Simple 1f	CA	1652.8	0.8	1653.4	4		
	Simple 2	SD	1714.2	0.6	1714.4	11		
	Simple 1	SD	1956.6	0.6	1956.9	4		
26	Simple 1	SD	1353.5	3.2	1354.5	5	1333-2021	
	Group (2)	F	1949.5	5.3				post sun level slightly high
	Simple 2A	SD	1949.5	2.5	1950.8	17		
	Simple 1A	CD	1952.0	2.8	1953.0	7		
28	Simple 1	SD	1318.9	0.5	1319.2	4	1215-2059	
	Simple 1	SD	1330.6	0.9	1331.0	4		
	Complex	CD	1434.4	5.6	1436.1	9		
	Simple 1	SD	1514.7	1.3	1515.3	2		
	Simple 2	SD	1551.2	4.5	1553.0	22		
29	Complex	CA	1415.1	13.6	1421.5	76	1238-2254	
	Post Inc A			01 37.6		11		
	Simple 2	ESD	1600.3	5.9	1601.0	8		
	Simple 1	SD	1621.0	5.9	1623.7	5		
30	Simple 3	ESD	1435.6	8.9	1436.0	10	1225-2333	
	Pre	CA	1525.5	1.4		11		
	Simple 2	SD	1526.9	6.2	1529.3	418		
	Post Inc		1533.0	Indef.		30		
	Simple 3A	SD	2125.2	01 35.0	2146.0	109	1225-2333	
	Simple 2f	SD	2130.7	11.5	2133.2	31		
31	Simple 1	SD	1421.5	2.2	1423.2	2	1226-2054	
	Simple 2	SD	1751.1	6.3	1754.3	8		

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

Washington,D.C. AUGUST 1958 **3200 Mc.**

Aug. 1958	Type	IAU	Start UT	Duration Hrs:Min.	Maximum Time UT	Maximum Peak Flux	Observing Period UT	Remarks
1	Simple 2f	SD	1327.5	1.7	1328.5	10	1228-2050	
	Simple 1	SD	1443.4	3.6	1444.9	4		
4	Simple 1	SD	1310.1	1.5	1310.4	6	1234-2020	
	Simple 3	SD	1429.1	10.2	1433.9	6		
	Simple 1	SD	1622.5	3.3	1624.5	5		
5	Simple 3	SD	1348.5	12.0	1349.5	3	1238-2040	
	Simple 2	SD	1628.0	2.2	1628.7	16		
6	Simple 3	SD	1534.6	10	1537.4	7	1235-2031	
7	Simple 3A	SD	1459	01 51.0	indet	21	1230-2030	
	Simple 2	CD	1502.6	1.7	1502.9	74		
	Simple 2f	SD	1506.0	3.0	1507.3	39		
	Complex f	CD	1520.7	5.4	1521.8	101		
	Simple 2	SD	1547.0	2.0	1447.8	31		
	Simple 2	SD	1920.7	5.6	1921.8	11		
8	Simple 1	SD	1421.8	2.5	1422.8	4	1230-2045	
	Simple 1A	SD	1629.3	7.5	1634.7	6		
	Simple 2	CD	1631.5	0.5	1631.8	13		
11	Simple 1	SD	1439.7	5.0	1440.7	4	1208-2045	
	Simple 3A	SD	1451.3	01 49.0	1501.4	27		
	Simple 2	CD	1453.3	1.4	1553.8	27		
	Simple 2	SD	1455.4	1.2	1455.9	37		
12	Simple 3A	CA	1631.7	02 28.0	indet	8	1200-2053	
	Simple 1	ESD	1632.3	0.4	1632.5	6		
	Complex	CD	1642.7	3.0	1644.3	13		
	Simple 2	SD	1654.2	0.8	1654.6	12		
	Complex	CD	1850.0	1.3	1850.4	70		
	Simple 2	SD	1933.0	6.5	1934.6	10		
	Simple 1	SD	1953.0	7.0	1956.0	6		
13	Complex	CA	1205.2	13.3	1210.1	50	1130-2050	
	Post Inc			01 06.0		17		
	Simple 3A		1530.0	32.7	1532.5	48		
	Simple 2	SD	1531.9	0.3	1532.0	37		
14	Simple 1	SD	1421.0	3.0	1422.4	3	1135-2045	
15	Simple 3A	F	1308.0	29.0	indet	3	1232-2047	
	Simple 1	SD	1308.0	2.0	1309.0	4		
	Simple 1	SD	1311.0	1.5	1311.5	4		
	Simple 1	SD	1314.0	2.0	1314.7	4		
	Simple 1	SD	1316.7	2.0	1317.3	5		
	Simple 2	SD	1319.0	6.0	1321.2	9		
	Simple 2	SD	1327.0	5.0	1329.2	9		
	Simple 3	SD	1523.0	26.0	1530.1	3		
16	Simple 2	SD	1317.3	12.7	1318.1	9	1300-2241	
18							1232-2045	
19							1200-2045	
20							1210-2053	
21							1132-2052	
22	Complex	CA	1424.0	02 41.0	1505.8	1593	1124-2042	
	gradual fall from peak to preburst level at 1705							
23	Complex	CD	1414.9	6.0	1420.1	24	1340-2045	
	Post Inc			11.3		4		
	Simple 1	SD	1550.9	4.0	1551.9	5		
	Simple 3	SD	1652.0	16.0	1655.2	26		
25							1145-2045	
26							1228-1900	
27	Simple 2	ESD	2047.7	0.8	2038.1	9	1125-2252	
	Simple 1	SD	2240.6	1.5	2241.1	7		
28	Simple 2	SD	1152.1	2.6	1153.0	10	1125-2035	
	Complex	CD	1801.5	14.1	1805.1	30		
29							1335-2200	
30							1313-2216	

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

Washington,D.C. SEPTEMBER 1958 **3200 Mc.**

Sept 1958	Type	IAU	Start UT	Duration Hrs:Mins	Maximum Time UT	Maximum Peak Flux	Observing Period UT	Remarks
1	Simple 2	SD	2056.0	2.6	2056.6	9.6	1810-2210	
2	Simple 3	SD	1802.8	11.0	1804.8	3.0	1442-2130	
	Simple 1	SD	2004.0	1.5	2004.5	3.0		
	Simple 2	CD	2102.8	3.0	2104.7	299		
	Post Inc			25.0		184		
3	Complex	ECD	1758.1	9.0	1758.3	34	1242-2245	
	Simple 3	SD	1923.0	32.0	1931.3	15		
	Simple 3	SD	2052.5	21.0	2056.5	5		
4	Simple 1	ESD	1507.7	1.0	1507.9	6	1342-2225	
5	Simple 1	SD	1414.8	2.5	1416.2	7	1244-2027	
8							1238-2045	
9					1920.0		1232-2043	In interference
10	Simple 3	SD	1422.4	26.0	1436.0	16	1225-2100	
	Simple 2	SD	1422.4	5.4	1425.6	30		
11	Complex	CD	1407.2	8.3	1409.8	19	1237-2045	
	Simple 2	ESD	2037.7	3.7	2037.9	12		
12	Complex f	CA	1416.0	30.0	1420.6	6	1235-2038	
	Simple 3	SD	1547.7	>16.0	1549.7	8		Record interrupted
	Simple 3f	SD	1706.8	14.0	1711.0	12		
	Simple 2	SD	1736.8	6.4	1738.4	8		
15	Simple 2	SD	1515.5	1.3	1517.2	9	1246-2045	
	Simple 2	SDF	1701.3	1.4	1701.9	347		
					1702.1	347		
	Post Inc	SA		3 42.0		45		Remained above pre burst level during remainder of period
	Simple 3f	CA	1939.0	<01 06.0	2003.0	9		
16	Simple 3f	CA	1444.8	01 26.0	1458.5	28	1235-2037	
17	Simple 3A	SD	1540.0	8.3	Indet	3.9	1233-2044	
	Simple 2	SD	1545.9	0.7	1546.3	13.0		
18	Simple 2	ESD	1627.3	1.3	1627.8	14.0	1238-2042	
	Simple 2	ESD	1701.5	3.8	1701.9	67.0		
	Simple 2	ESD	1851.1	6.0	1851.3	26.0		
	Simple 3f	SD	2003.9	3.3	2004.7	11.0		
19	Simple 3	SD	1911.4	1.7	1912.1	13.0	1300-2035	
	Post Inc			12.0		4.0		
22							1140-2042	
23							1150-2039	
24	Simple 1	ESD	1448.5	.8	1448.8	7.0	1130-2030	
25	Simple 2f	SD		Est 5.0	1442.8	15.0	1128-2108	not on sun at start
26							1130-2044	
29							1138-2043	
30	Simple 1	SD	1503.3	3.0	1503.9	5.0	1135-2035	

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
SEPTEMBER 1958

OTTAWA 2800 MC

Sept 1958	Type*	Start UT	Duration Hrs:Mins	Maximum Time UT	Maximum Peak Flux	Remarks
1	1 Simple 1	1847	0.8	1847.3	6	
1	2 Simple 2 f	2056	6	2056.5	12	
3	6 Complex	1758.3	4.5	1758.7	55	
3	2 Simple 2	1929.5	4	1931.5	12	
4	1 Simple 1	1502.2	1	1502.5	4	
4	3 Simple 3	2000	40	2009	5	
5	3 Simple 3	1359	40	indet.		
6	1 Simple 1	1321.5	4	1322.5	5	
6	2 Simple 2	1755	2	1755.3	30	
7	2 Simple 2	1059	3	1100	25	In sunrise osc.
7	2 Simple 2	1448	3.5	1449.1	85	
	4 Post Increase A		25		6	
7	2 Simple 2	1452.2	2.5	1452.8	16	
7	3 Simple 3 A	1649	2	indet.	10	
	2 Simple 2	1658	9	1659.2	145	
7	2 Simple 2	2138.3	4	2139	25	
9	3 Simple 3	1353	1	indet.	7	
9	1 Simple 1	1907	4	1908	4	
9	2 Simple 2	2231	3	2231.7	18	
10	6 Complex	1322.5	18	1325.5	30	
11	2 Simple 2	1114.5	3	1115	22	
11	3 Simple 3 A	1213.5	20	indet.	7	
	8 Group (2)	1213.5	6.8			
	2 Simple 2 f	1213.5	2.5	1214	31	
	2 Simple 2	1217.3	3	1218.5	9	
11	1 Simple 1	1318	3	1319	4	
11	6 Complex	1406.7	10	1410	24	
11	2 Simple 2 f	1805	10	1808.5	55	
11	2 Simple 2	2037.4	2.5	2038	13	
12	1 Simple 1	1532.5	4	1534	4	
12	1 Simple 1	1547	7	1549.5	7	
12	2 Simple 2	1617.5	5	1618	23	
12	1 Simple 1	1639	1	1639.5	3	
12	6 Complex	1706	15	1711	15	
12	6 Complex	1737	7	1738.5	9	
13	1 Simple 1	1444	2	1445	4	
13	2 Simple 2	1937	5	1938.5	17	
	5 Absorption	1942	35		-10	
13	1 Simple 1	2040	2	2041	6	
14	1 Simple 1	1223.3	1	1223.8	4	
14	1 Simple 1	1235.5	2	1236.2	7	
14	1 Simple 1	1613	3	1614	5	
14	3 Simple 3	1727	10	1730	5	
14	3 Simple 3	1743	8	1745	5	
14	2 Simple 2	1810.5	1.5	1811	9	
14	1 Simple 1	1916.5	1.5	1917	3	
14	1 Simple 1	2123	3	2124.5	7	
14	2 Simple 2	2151.5	0.7	2151.8	11	
15	2 Simple 2 f	1701.2	6	1702	220	
	4 Post Increase		45		12	
15	8 Group (2)	1939	4			
	2 Simple 2	1939	1	1939.3	8	
	2 Simple 2	1941.5	1.5	1942.2	10	
15	6 Complex	2233.5	2.5	2234.2	25	In sunset osc.
16	2 Simple 2	1445	3	1446	12	

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
SEPTEMBER 1958

OTTAWA 2800 MC

Sept 1958	Type*	Start UT Hrs:Mins	Duration Hrs:Mins	Maximum Time UT Hrs:Mins	Maximum Peak Flux	Remarks
16	3 Simple 3 A	1455	1 20	1515	20	
	6 Complex	1455	5	1458.5	25	
16	2 Simple 2	2212	1.5	2212.5	10	
17	2 Simple 2	1546	1	1546.3	15	
17	3 Simple 3 f	1940	10	1945	6	
18	1 Simple 1	1627.3	1.5	1628	4	
18	2 Simple 2	1701.5	2	1702	33	
18	2 Simple 2	1851	2	1851.2	26	
18	2 Simple 2 f	2004	1	2004.7	25	
19	2 Simple 2	1911	2	1912	9	
20	3 Simple 3	1435	15	1443	7	
20	1 Simple 1	1907	1.5	1907.5	4	
20	3 Simple 3	1950	13	1952	7	
20	3 Simple 3	2029	35	2032.5	10	
21	2 Simple 2	1535	3	1536	15	
24	1 Simple 1	1448.5	1	1449	6	
24	2 Simple 2	1957.5	4	1959.5	8	
25	6 Complex	1440	7	1442.2	16	
27	2 Simple 2	1422	2	1422.5	9	
27	2 Simple 2	2153.5	1.5	2154.2	8	
28	2 Simple 2	1532.2	3	1532.8	21	
28	2 Simple 2	2044	3	2045.5	58	
29	2 Simple 2	1555	1	1555.5	13	

HOURS OF OBSERVATIONS: JULY, AUGUST, SEPTEMBER 1958

OBSERVING PERIOD: July 1005 UT - 2400 UT (approx.)
August 1045 UT - 2330 UT (approx.)
September 1115 UT - 2240 UT (approx.)

with the following exceptions:

(1) Observations commenced:
July 4 at 1435
22 1435
27 1550
29 1355
Aug 8 1500
Sept 1 1525
3 1425
24 1300.

(2) Observations ended:
July 26 1940
Aug 7 1940
Sept 2 1955.

(3) Periods of interference obscuring the records on:
July 1, 8, 11, 14.
Aug 12, 29.
Sept 5, 20, 26.

(4) No observations:
July 31 1405 - 1505
Aug 7 1240 - 1405.

SOLAR RADIO EMISSION

DAILY DATA

SEPTEMBER 1958

CORNELL — 200 MC

Sept 1958	Flux Density 10^{-22}w m^{-2}(c/s)$^{-1}$ Hours UT			Variability 0 to 3 Hours UT			Observing Periods Hours UT
	12 15	15 18	18 21	12 15	15 18	18 21	
1	[22	33	30]	[2	2	2]	1245-2005
2	[30	35	19]	[3	2	2]	1255-2000
3		[15	16]]		[2	2]]	1610-1825
4		12	11]		0	1]	1300-2010
5	[12	11		[1	1		1245-1815
6	[11	11]]		[0	0]]		1250-1605
7	[11	11]]		[0	0]]		1240-1605
8							
9							
10		[12	14]		[1	2]	1550-2000
11	[13	12		[1	1		1305-1815
12	[12	12	12]	[0	1	0]	1310-1945
13							
14	12	11]]		0	0]]		1240-1600
15		12	12]		1	1]	1530-1930
16	[11	11	12]	[1	1	1]	1245-2005
17	[12	12	12]	[0	0	0]	1245-2005
18	[12	12	12]	[0	0	0]	1245-2005
19	[12	12	12]	[0	0	0]	1250-2005
20	[12	12]		[0	0]		1300-1620
21	[12	12]]		[0	1]]		1255-1610
22	[12	12	12]	[0	0	0]	1240-2000
23							
24	[[12	12	12]	[[0	0	1]	1420-2005
25	[11	11	11]	[0	1	0]	1255-2010
26	11	11	11]	1	1	0]	1240-2000
27	11	11]]		0	0]]		1235-1610
28	12	12]]		0	0]]		1225-1605
29							
30	[11	11	11]	[1	1	0]	1245-2005

COMMERCE - STANDARDS - BOULDER

[= 1st hour missing.
[[= 1st two hours missing.
] = last hour missing.
]] = last two hours missing.

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
SEPTEMBER 1958

CORNELL — 200 MC

Sept 1958	Type Ap.J	Start UT	Time of Maximum	Duration Minutes	Type IAU	Max. Flux Density 10^{-22}w $m^{-2}(c/s)^{-1}$ Inst.	Smooth	Remarks
1	2	1248	1249.5	5	F	260	180	
	2	1602	1604	38	F	320	140	
	8	1708.5	1709.5	4	CD	740	380	
	3	1932		.5	SA	210	120	
2	3	1314		1	CA	72	41	
	7	1311		319	E			
	2	1944	1948	11	F	120	91	
5	3	1326.5		.5	SD	55	41	
7	2	1449.5	1453.5	6	ECD	~65		
10	3	1713.5		1	CA	52	37	
	3	1726		.5	CA	52	37	
	3	1803		1.5	CA	52	36	
	3	1938		.5	SA	~65		
11	2	1407	1407.5	3.5	CD	54	40	
	2	1558.5	1602.5	5.5	CD	260	210	
	3	1627.5		.5	SD	55	41	
	8	1731	1732.5	2	CD	740	630	
14	3	1318		.25	CD	91	72	
	3	1326.5		.25	CD	72	55	
	3	1355		<.25	SD	260	210	
16	2	1456	1458.5	2.5	CD	120	91	
18	3	1740.5		.5	SD	120	91	
19	3	1416.5		<.25	SD	52	38	
24	8	1508.5	1514.5	7	CD	380	320	
	3	1537.5		.25	SD	55	42	
	3	1853.5		.5	SD	72	55	
25	3	1454.5		.5	SD	630	530	
	3	1633		.5	SD	2400	2000	
26	3	1246		.25	SD	880	740	
	3	1329		<.25	SD	260	210	
	3	1537		1	CD	72	55	
	3	1541		.25	SD	72	55	
	3	1720		1	CD	380	320	
30	8	1338	1339	2	CD	320	260	
	2	1501	1503.5	7	CD	1200	1000	
	2	1546		2	CD	58	45	
	3	1713.5		.5	CD	140	120	
	3	1722		1	CD	91	72	
	3	1735.5		.25	CD	58	45	

SOLAR RADIO EMISSION

DAILY DATA
JULY 1958

BOULDER 167 MC

1958 July	Flux Density 10^{-22}w m^{-2}(c/s)$^{-1}$ Hours UT 0 3	12 15	15 18	18 21	21 24	Day	Variability 0 to 3 Hours UT 0 3	12 15	15 18	18 21	21 24	Day	Observing Periods Hours UT
1	-	17	18	22	22	20	-	1S	2S	2S	2S	2S	11.7-20.6; 22.0-26.2
2	-	60	91	60	91	78	2S	2S	2S	2S	2S	2S	11.7-26.3
3	-	78	67	101	98	86	2S	2S	2S	3S	2S	2S	11.7-26.3
4	-	73	38	38	34	42	2S	2S	1S	1S	1S	1S	11.7-26.3
5	-	48	40	52	40	43	1S	2S	2S	2S	2S	2S	11.7-26.2
6	-	115	70	46	29	59	1S	2S	2S	3S	2S	2S	11.7-26.3
7	-	20	-	21	-	20	2S	1S	-	1S	-	1S	11.7-15.0; 17.0-22.0; N1
8	-	18	18	19	20	19	0S	2S	1S	0S	0S	1S	11.7-26.2
9	-	26	25	24	24	24	0S	0S	0S	2S	1S	1S	11.7-26.2
10	-	18	20	20	21	20	0S	1S	1S	1S	1S	1S	11.8-26.2
11	-	24	22	24	24	24	1S	2S	2S	2S	2S	2S	11.8-26.2
12	-	133	75	61	84	87	1S	2S	2S	2S	2S	2S	11.8-26.2
13	-	226	239	174	160	194	2S	1S	1S	0S	0S	1S	11.8-26.2
14	-	63	63	55	43	53	0S	2	2S	2S	2S	2S	11.8-26.2
15	-	22	34	26	26	28	1S	2	2S	2S	2S	2S	11.8-26.2
16	-	21	21	21	22	21	2S	1S	1S	2S	2S	2S	12.3-26.1
17	-	37	26	22	21	25	2S	2S	2S	2S	1S	2S	12.0-26.1
18	-	23	19	17	16	18	1S	2S	2S	2S	2S	2S	11.8-26.1
19	-	17	29	112	174	86	2S	0S	2S	3S	2S	2S	11.8-26.1
20	-	40	35	29	24	30	2S	1S	2S	2S	2S	2S	11.8-26.0
21	-	24	24	41	61	41	2S	0S	1S	2S	2S	2S	11.8-26.0
22	-	47	24	18	17	25	2S	1S	2S	2S	2S	2S	11.8-26.0
23	-	29	27	37	31	33	1S	2S	2S	2S	2S	2S	11.8-26.0
24	-	338	218	219	129	204	2S	2S	2S	2S	2S	2S	11.9-26.0
25	-	-	52	52	54	51	2S	-	2S	2S	2S	2S	14.2-26.0
26	-	21	19	20	23	22	1S	1S	1S	2S	2S	2S	11.9-26.0
27	-	-	83	93	125	103	2S	-	2S	2S	2S	2S	14.5-26.0
28	-	-	113	87	90	96	2S	-	2S	2S	2S	2S	13.6-25.9
29	-	-	49	40	29	40	2S	-	1S	2S	2S	2S	13.7-25.9
30	-	34	29	19	18	24	2S	2S	2S	2S	2S	2S	12.0-25.9
31	-	-	19	33	39	29	2S	1S	2S	2S	2S	2S	12.0-13.0; 13.7-25.9

Note 1 - July 7, Observing Periods continued 24.0-26.2

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
JULY 1958

BOULDER

167 MC

July 1958	Type Ap.J	Start UT	Time of Maximum	Duration Minutes	Type IAU	Max. Flux Density 10^{-22}w m^{-2}(c/s)$^{-1}$ Inst.	Smooth	Remarks
1	1	1140 B	1821.1	870 D	MF	200	—	S, I 2036-2200
1	3	1616.7	1617.4	1.1	CD	480	—	Bursts 1954.0, 2016.4
2	6	1140 B	1905.8	875 D	CA	2000 D	77	S
3	6	1140 B	1851.0	875 D	CA	2800 D	90	S
3	3	2013.3	2013.5	2.3	ECD	1600 D	330	S Large Bursts 2321.7, 2322.4
4	6	1140 B	1330.9	875 D	CA	540	46	S
5	6	1140 B	1734.8	870 D	CA	670	34	S
5	3	2119.6	2120.4	1.4	ECD	1100	—	S
6	6	1140 B	2009.4	875 D	CA	2000 D	87	S, N2
7	2	1736.8	1737.4	1.6	ESD	290	—	S
7	2	1754.3	1755.2	1.7	CD	1000	—	S
8	2	1336	1337.9	5.0	CD	1100	240	
9	1	1140 B	1209.2	870 D	MF	96	—	S
9	2	1943	1944.2	4	ECD	460	220	
10	3	1316.3	1317.2	1.5	CD	110	4	Burst 1753.1
10	2	2018	2019.1	1.6	CD	350	100	
11	1	1145 B	1357.6	865 D	MF	1700 D	—	S
11	3	1252	1252.9	3.0	ECD	3700 D	350	
11	3	1608.3	1610.1	2.3	ECD	3200 D	—	S
11	2	1859	1859.9	4.0	ECD	420	—	S
12	6	1145 B	2256.5	865 D	CA	340 D	110	S
12	2	1834	N3	8.0	ECD	1400	—	S, N3
13	6	1145 B	1724.1	865 D	CA	3300 D	230	S
14	6	1145 B	1844.1	865 D	CA	570	47	S Large Bursts 1352.1, 1912.6
14	3	2054.7	2055.0	1.8	ECD	3400 D	—	
15	1	1150 B	1360.0	160 X	MF	75 X	—	S
15	6	1430 X	1555.2	210 X	CA	640	18	S, Bursts 1630.8, 1708.2
15	1	1800 X	2436.4	490 X	MF	180	—	S
16	1	1220 B	2033.0	825 D	MF	500	—	S
16	3	2053	2055.2	6.0	CD	980	370	S
17	1	1200 B	1549.9	845 D	MF	370	—	S
17	3	1839.3	1839.9	0.6	ECD	350	—	S
18	3	1606.5	1606.9	0.9	ESD	2100 D	—	N4
18	2	1720	1721.0	5.0	ECD	810	130	S
18	3	2505.4	2505.9	1.3	ESD	1000	—	

Notes:
1. Severe sferics and man-made interference may sometimes obscure or be mistaken for solar events. Relatively small events are not reported.
2. July 6, Large bursts 1338.5, 1456.0, 2151.1.
3. July 12, Maximum occurred between 1836 and 1839. Cannot be determined because of interference.
4. July 18, Large bursts 1236.1, 1241.8, 1247.2, 2542.1. Burst 2421.1.

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
JULY 1958

BOULDER 167 MC

July 1958	Type Ap.J	Start UT	Time of Maximum	Duration Minutes	Type IAU	Max. Flux Density 10^{-22}w m^{-2}(c/s)$^{-1}$ Inst.	Smooth	Remarks
19	6	1700 X	1751.1	125 X	CA	1600	160	S
19	9a	1905	N5	7.5	ECD	2900 D	—	N5
19	9b	1912.5	1913 X	2.0	CD	1500	—	N6
19	6	1915 X	2141.1	410 X	CA	2000 D	160	S
19	3	2404	2404.5	1.0	CD	1300	—	S
19	2	2408	2411.6	7.0	CD	700	140	S
20	6	1150 B	1417.1	850 D	CA	2200 D	21	S
21	1	1150 B	1538.9	400 X	MF	140	—	S
21	6	1830 X	2430 X	450 X	CA	N7	45	S, N7
22	6	1150 B	1421.2	235 X	CA	150	29	
22	2	1545 X	1557.0	33 X	CD	830	95	S
22	1	1618 X	1947.3	582 X	MF	170	—	S
23	6	1150 B	1211.1	92 D	CA	480	20	
23	9	1322	1325.1	38 I	ECD	420	85	I 1326-1329
23	6	1400 X	1514.1	720 X	CA	1900 D	19	S, Large burst 1408.3, 1508.9
24	6	1155 B	1255.3	845 D	CA	3200 D	280	S
25	6	1410 B	1623.0	710 D	CA	7200 D	39	S
26	8	2223	2224.3 I	8.0	ECD	410	—	S, I 2226-2229
26	6	2231 X	2401.8	209 X	CA	450	12	S
27	6	1430	2017.0	690 D	CA	3200 D	110	N8
27	2	2210	N9	3.0	ECD	3500 D	—	N9
28	6	1337	1932.2	738 D	CA	1400	99	S
28	3	1746	1746.3	1.0	ECD	1300	—	
29	6	1342	1536.5	733 D	CA	310	34	S
30	6	1200 B	1750.9	420 X	CA	2500 D	15	S
30	1	1900 X	2207.4	415 X	MF	180	—	S
31	1	1200 B	1531.1	390 X	MF	280	—	S, I 1300-1340
31	6	1830 X	2428.9	445 X	CA	1300	33	S, N10
31	2	1844	1846.1	3.0	ECD	2700 D	—	S

Notes:
5. July 19, Due to receiver limiting, cannot determine the time of maximum.
6. July 19, Same as note 5.
7. July 21, Maximum flux value cannot be determined because of interference.
8. July 27, Large bursts 1535.2, 1851.0, 1915.1, 1918.5, 2151.1, 2310.5, 2407.1.
9. July 27, Maximum occurred sometime between 2210.6 and 2212.9. See note 5.
10. July 31, Large burst observed at 1251.0 although the antenna was off sun.

SOLAR RADIO EMISSION

SPECTRUM OBSERVATIONS

Fort Davis — SEPTEMBER 1958 — 100-580 Mc.

Date and Observing Times (U.T.) 1958	Type I (Noise Storms and Continuum)			Type II (Slow Drift Bursts) Unclassified				Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Act	Time	Int	Act	Time	Int	
Sept. 1											
0000-0110		← 0102	1					G	0002-03	2	
1300-2400		1300-1604	1					g	0003-04	3	
		1604-22	2					g	0005-06	2	
		1622-1716	1					G	0010-11	2	
		1732-2002	1					g	0044-45	2	
		2035-40	2					g	0046	2	
		2108-09	2					G	0047-48	3	
		2141-44	2					G	0049-52	2	
		2216-27	2					g	0058	2	
		2247	2					g	1316	2	
		2326 →	2					b	1538	2	
								g	1933	3	
								g	1946-47	2	
								g	2156	3	
								g	2159	2	
Sept. 2											
0000-0110		← 0002	2					b	1618	1	
1300-2400		0037-56	2					g	1831	3	
		1302-1852	1	II		2108.0-15XX	3+	g	1904	3	
		1913-2114	1					g	2001	1	
		2114-42	2					g	2104	2	
		2142-2208	1					b	2023	1	
		2208-49	2					b	2024	1	
		2249 →	1								
Sept. 3											
0000-0110		← 0101	1					g	1508	3	
1300-2400		1304-1627	1					g	1554	2	
		1745-1806	1					g	1758	3	
		1824-2000	1					b	2108	1	
		2121-2240	1								
		2255	1								
		2330	1								
		2350-52	1								
Sept. 4											
0000-0100		1502-03	1								
1315-2400		2331	1								
Sept. 5											
0000-0100								g	1327	1	
1302-2400											
Sept. 6											
0000-0100								g	1451	1	
1302-2400											
Sept. 7											
0000-0100		2002	1-					b	1355	1	1449.7-55.
1300-2400				Uncl.		1449.7-55	1	g	1413	1	This uncl.
				Uncl.		1457	1	g	1449-50	2	burst has
								g	1807	1	some features
								g	1923	3	of a Type II
								b	1959	1-	burst.
Sept. 8											
0000-0100		1759	1-					g	1401	2	
1302-2400		2118-49	1					g	1830	2	
		2207-20	1					g	2009	2	
		2303	2					b	2012	1	
		2322	2					g	2044-46	1	
								b	2117	3	
								g	2135	2	
Sept. 9											
0000-0050		1349	1					g	1318-19	2	
1300-2400		1355	1					g	1322	2	1810 Two
		1357	1					g	1514	2	Inverted
		1515	1					g	1520	1	U bursts.
		1545	1					b	1532	1	
		1750	1-					g	1642	3	
								g	1643	1	
								g	1702	2	
								g	1720	2	
								b	1723	2	
								G	1808-10	2	
								g	1814	1	
								b	1819	1-	
								b	1844	2	
								b	1915	1	
								g	1935-36	3	
								g	1951-52	1	
								g	1959-2000	3	
								b	2018	1	
								g	2019	1	
								g	2052	2	
								b	2120	1	
								g	2149	1	
								G	2222-24	3	

SOLAR RADIO EMISSION

SPECTRUM OBSERVATIONS

Fort Davis — SEPTEMBER 1958 — 100-580 Mc

Date and Observing Times (U.T.) 1958	Type I (Noise Storms and Continuum)			Type II (Slow Drift Bursts) Unclassified				Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Act	Time	Int	Act	Time	Int	
Sept. 9											
0000-0050								b	2227	1	
1300-2400								g	2231-32	3	
Sept. 10											
0000-0050		1519-20	1					g	0008	2	
1300-2400		1704	1					g	1404-05	3	
		1719	1					g	1423	1	
		1750-1805	1					g	1444	1	
		1821-30	1					g	1458	1	
		1844	1					g	1515	2	
		1921-30	1					b	1656	1	
		1945-56	1					b	1719	1	
		2017-32	1					b	1727	3	
		2054-2100	1					G	1803-04	2	
		2112-13	1					g	1821	2	
								g	1824	1	
								g	1939	2	
								g	2247-48	1	
								b	2314	1	
								g	2322	1	
								g	2336	2	
								b	2344	1	
								g	2400	1	
Sept. 11											
0000-0045		1408-14	2					g	0017	1	
1301-2400		1732-35	1					b	0026	3	
		1803-05	1					g	1302-04	1	
		1943-2019	1					g	1320-21	2	
		2330-34	1					g	1337	1	
		2353	1					G	1559-1600	2	
								G	1601-03	2	
								b	1608	1	
								g	1733	2	
								g	1736	1	
								b	2136	1	
								b	2330	1	
Sept. 12											
0000-0040		1304	1					b	1410	1	
1301-2400		1352	1					b	1608	1	
		1511-12	1					b	1639	1	
		1624	1					b	1711	3	
		1626	1					b	1715	1	
		1703-1802	1					g	1734-35	1	
		2330	1					g	1737	1	
								g	1739	1	
								g	1741	1	
								b	2029	1	
								g	2037	3	
Sept. 13											
0000-0040		0005-33	1					g	1501	2	
1300-2400		1936-40	1					b	2017	1	
		2006-22	1					g	2146	1	
		2040-2248	1					g	2147	1	
		2337-41	1								
Sept. 14											
0000-0040		1551	1					g	1318	2	
1302-1841		1928	1					g	1326-27	2	
1849-2400	Cont.	2326	2					g	1355	2	
		2329	1					b	1440	1	
								g	1454	2	
								g	1518	1	
								b	2146	1	
								g	2326-27	2	
								g	2328	3	
Sept. 15											
0000-0040		1651-1719	1					b	1344	1	
1306-2400		1754-56	1					g	1408	2	1512 Inverted
		1811-29	1					g	1409	3	U burst.
		1854-1907	1					g	1512	3	
								g	1515-16	2	
								G	1545	3	
								g	2235	1	
Sept. 16											
0000-0040		1340	1-					b	1433	3	
1302-2400		1458-1502	1					b	1457	1	
		1535-39	1	Uncl.		1531-34	3	G	1524-26	3	
		1630-43	1-					G	1530-31	2	
		1700-03	1-	Uncl.	g	1549-50	3	b	1534	3	
		1718-34	1-					g	1735	1	
		1811-25	1-					b	2108	3	
		1901-29	1-					G	2212	3	
		2014-20	1-					g	2214	2	
		2042	1								
		2051	1-								

SOLAR RADIO EMISSION

SPECTRUM OBSERVATIONS

Fort Davis — SEPTEMBER 1958 — **100-580 Mc.**

Date and Observing Times (U.T.) 1958	Type I (Noise Storms and Continuum)			Type II (Slow Drift Bursts) Unclassified				Type III (Fast Drift Bursts)			Remarks
	Bursts* or Continuum	Time	Int	II or Unclass	Act	Time	Int	Act	Time	Int	
Sept. 16											
0000-0040		2102-13	1-								
1302-2400		2128-35	2								
		2155-2241	1-								
		2257 →	1-								
Sept. 17											
0000-0035		← 0019	1					g	1618	1	
1302-2400		1655	1					b	1851	1	
		2244	1					b	2054	1	
Sept. 18											
1948-2400								g	2319	1	
Sept. 19											
0000-0035		1552	1					b	2125	2	
1301-2400											
Sept. 20											
0000-0035											
Sept. 21											
1302-2400		1757	1					g	1316	1	
		1919	1								
Sept. 22											
0000-0030								b	0013	2	
1302-2400								b	1343	1	
								b	2043	1-	
Sept. 23											
0000-0030		0010-24	1					g	1422	2	
1302-2400		1316-1404	1					b	1641	1	
		1418	1					g	1717	2	
								g	1720	1	
								g	2051	2	
Sept. 24											
0000-0030		1449	3					g	1418-19	2	
1301-2400		1538	1					g	1449	3	
								g	1513-14	1	
								g	1515	3	
								g	1812	1	
								b	1843	1	
								b	2044	1-	
								g	2119	1	
								g	2230	2	
								g	2319-20	2	
								b	2326	1	
								b	2341	3	
Sept. 25											
0000-0025								b	1437	1-	
1301-2400								g	1455	2	
								G	1633-35	3	
								g	1639	1	
								G	1643-48	2	
								b	1746	2	
								b	2203	3	
Sept. 26											
0000-0025	Cont.	1621	3					g	1356	2	
1301-2400								b	1359	3	
								g	1502	2	
								G	1537-38	2	
								g	1541	2	
								b	1702	3	
								g	1720	2	
								b	1743	1-	
								g	2118	1-	
Sept. 27											
0000-0025		1938	1					g	1829	1	
1521-2400		2050	3					g	1847	1-	
								g	2213	1-	
								G	2319-20	1	
								b	2354	1	
Sept. 28											
0000-0025		1539	1	II		2046.0-2053	3	G	0003	2	
1301-1911								g	0011	1-	
1912-1916								g	1626	1	
1918-2400								g	2005	1	
								b	2045	1	
								G	2238-39	2	
								b	2305	2	
								g	2306	1	
								b	2307	1-	
								b	2310	1-	
								g	2336-37	1	
								g	2339-40	1-	
Sept. 29											
0000-0025		1440	1-					b	0018	1-	
1301-1610		1607	1					g	1439	1-	
1620-2249		1718-20	1-					b	1849	1	
		1806	1-					b	1916	3	
		1808	1-					b	1955	1-	
		1906-17	1-					g	2022-23	2	
		2021	1					G	2114-18	2	
		2051-57	2					b	2121	3	
								g	2233	2	
								g	2238	1	
Sept. 30	No observations.										

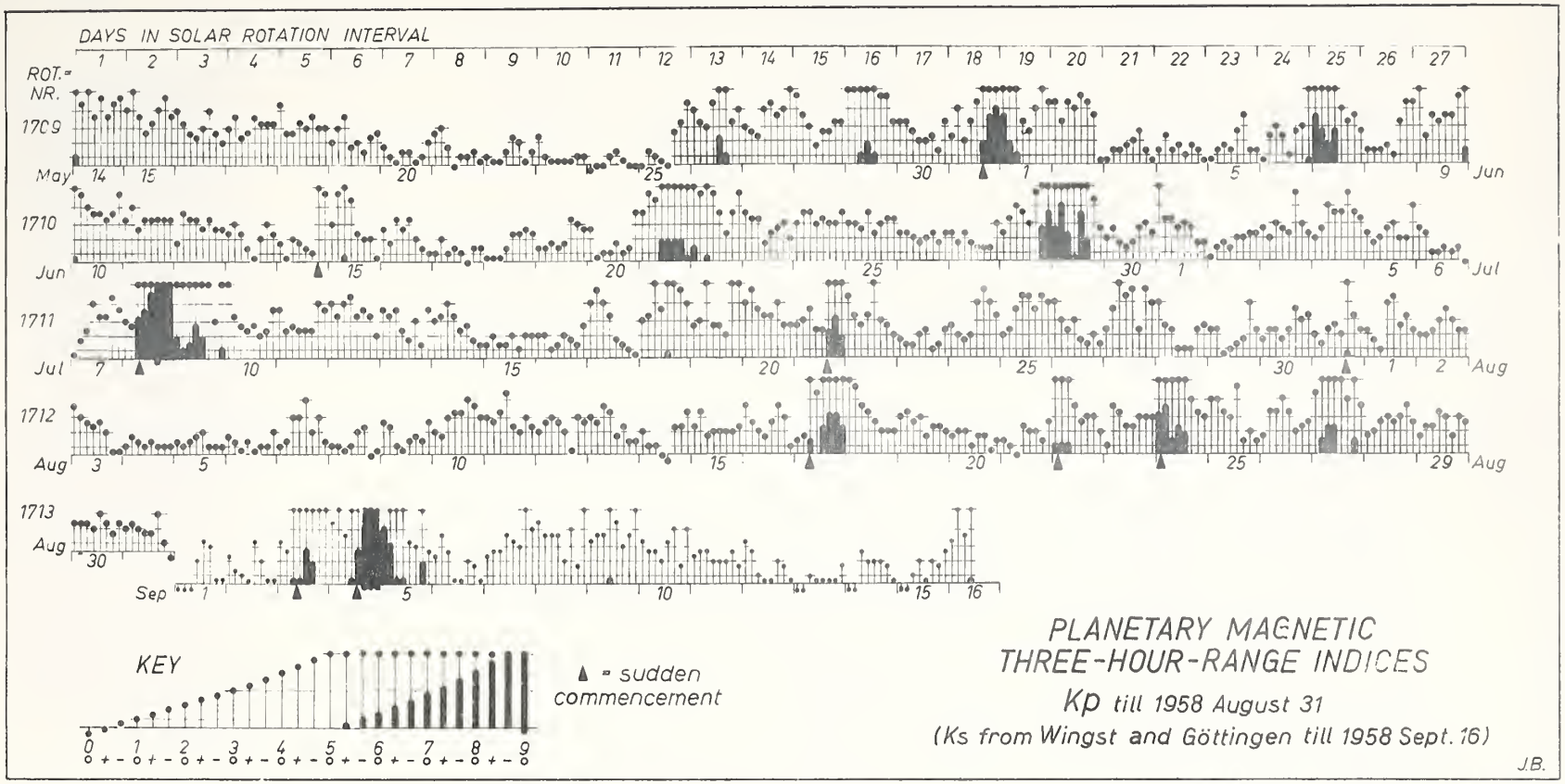
*Bursts unless specified otherwise.

GEOMAGNETIC ACTIVITY INDICES

AUGUST 1958

Aug. 1958	C	Values Kp — Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	0.9	2+ 2- 1o 4o	4+ 3- 3+ 2+	22-	15	Five
2	0.6	2o 2o 2+ 3o	4- 3o 2+ 2+	21-	12	Quiet
3	0.5	4- 3o 3- 2+	3- 2o 1- 1-	18-	10	
4	0.1	1o 2- 1+ 1o	1+ 1o 1o 1o	9+	4	4
5	0.2	1+ 1o 1+ 2-	2o 1o 1o 1o	10+	5	5
						6
6	0.2	2- 1+ 1- 1+	1- 1o 1o 2o	10-	5	8
7	0.6	1o 1+ 3o 3o	4o 2o 3o 1+	19-	12	20
8	0.2	1o 1o 1- 1o	2o 2+ 0+ 1-	9o	4	
9	0.3	3- 2+ 1o 1-	1+ 2- 1+ 3-	14-	7	
10	0.8	2o 2- 3o 3+	3+ 4o 4- 3o	24o	16	
11	0.8	3o 3- 3+ 4+	2+ 2o 3o 2+	23o	15	Five
12	0.6	2o 3- 3o 3-	2o 1- 3o 3-	19-	10	Disturbed
13	0.7	3o 3- 4- 3+	2- 2+ 1+ 1+	19+	12	
14	0.4	2o 1o 1o 0+	0o 2+ 2+ 3+	12+	7	17
15	0.5	2+ 3+ 2- 2o	2o 2o 2o 2+	18-	9	18
						22
16	0.8	4- 3- 2o 2-	3- 4- 3o 1o	20+	12	24
17	1.8	1+ 2- 6o 4+	7- 7+ 7+ 7-	41+	82	27
18	1.1	5o 5- 4- 3+	3- 2o 2o 2o	25+	20	
19	0.6	3o 3+ 3- 3o	2- 2+ 2+ 2o	20+	11	
20	0.1	2- 2o 2o 1o	2- 2- 1- 1+	12o	6	
21	0.2	1+ 1o 0+ 2+	2o 2o 1+ 3-	13o	6	Ten
22	1.4	6- 6- 6- 4-	3- 3o 3o 2o	31+	34	Quiet
23	0.7	1o 4- 3+ 2+	2+ 3o 3o 3o	22-	13	
24	1.8	7+ 8- 6o 7-	6+ 4o 3+ 3o	44+	85	4
25	1.0	4o 4o 3+ 3o	5- 1+ 2o 1+	24-	18	5
						6
26	0.8	2- 3+ 3+ 4o	3+ 2o 2+ 3-	23-	14	8
27	1.7	4+ 6o 7- 7-	5o 4o 6o 4-	42+	64	9
28	0.8	2- 2o 3- 3o	3- 3o 4- 3-	21+	13	14
29	0.5	2- 2+ 2+ 3+	3o 2- 3o 3-	20o	11	15
30	0.4	2+ 2+ 2+ 2o	3o 2+ 2- 2+	18+	9	20
31	0.3	2o 2+ 2o 2-	2- 3o 1o 0o	14-	7	21
						31
Mean:	0.69			Mean:	18	

COMMERCE - STANDARDS - BOULDER



COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS
NORTH ATLANTIC
AUGUST 1958

Aug. 1958	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day index	Advance forecasts (J-reports) for whole day; issued in advance by:			Geomagnetic K_{Fr}	
	00 to 06	06 to 12	12 to 18	18 to 24	00	06	12	18		1-4 days	4-7 days	8-25 days	Half Day (1)	(2)
1	6+	6-	6+	7-	6	5	6	6	6+	5	6		2	3
2	7o	6o	6+	6+	6	6	6	6	6+	6	6		2	3
3	6o	6-	6+	6+	7	6	6	6	6o	6	6		(4)	1
4	6+	6o	7-	7-	6	6	6	7	6+	6	6		2	1
5	7-	6o	7-	7-	6	6	6	6	6+	6	6		2	2
6	7-	6+	6+	6+	7	6	7	7	6+	7	6		1	1
7	7-	6+	6+	7-	7	6	7	6	6+	7	6		3	3
8	7-	6o	7-	7-	7	7	7	7	7-	7	7		1	2
9	7o	7-	7-	7-	7	7	7	7	7-	7	7		2	2
10	7o	7-	7-	7-	7	7	7	7	7-	7	7		3	3
11	7o	6o	6+	7-	7	7	7	6	6+	7	7		(4)	2
12	6+	6o	7-	7-	7	6	6	7	6+	7	7		3	2
13	6+	6-	7-	7-	6	6	7	7	6+	6	7		3	2
14	7-	6+	7-	6+	6	6	7	6	6+	6	7		1	2
15	6+	6-	7-	7-	6	6	6	7	6+	6	6		3	2
16	6+	6o	7-	6+	6	6	7	6	6+	6	7		2	3
17	6+	5+	6o	4-	6	6	6	4	5o	6	7		(4)	(6)
18	3-	3+	6o	6o	2	3	5	6	(4o)	7	7		(4)	2
19	6o	6-	7-	7-	6	5	6	6	6+	6	7		3	2
20	7-	6+	7-	7-	6	6	7	7	7-	6	7		1	1
21	7o	7-	7-	6+	6	7	7	7	7-	6	7		1	2
22	6-	4+	5+	6o	7	3	6	5	5+	7	6		(5)	2
23	6+	5+	6+	6o	5	6	6	6	6o	7	6		3	3
24	4+	3o	5+	6-	5	2	4	5	(4+)	7	6		(6)	(4)
25	5-	3+	6-	6o	4	4	5	5	5-	7	6		3	2
26	6-	4+	5o	6-	5	5	6	5	5o	6	7		3	2
27	6o	3-	6-	6-	4	4	4	5	5-	6	7		(5)	(4)
28	5+	5+	6o	6+	4	4	6	6	6-	6	7		2	2
29	6o	5+	6-	6o	6	6	6	6	6-	6	7		2	2
30	6o	6o	6o	6+	5	5	6	6	6o	6	7		2	2
31	7-	6o	6+	6+	6	6	6	6	6+	6	7		2	1

Score:			00	06	12	18	1-4 days	4-7 days
	Quiet Periods	P	14	16	17	18	16	14
		S	14	9	13	12	11	12
		U	0	0	0	0	2	3
		F	1	0	1	0	0	0
	Disturbed Periods	P	0	1	0	1	0	0
		S	2	5	0	0	0	0
		U	0	0	0	0	0	0
		F	0	0	0	0	2	2

( ) represent disturbed values.

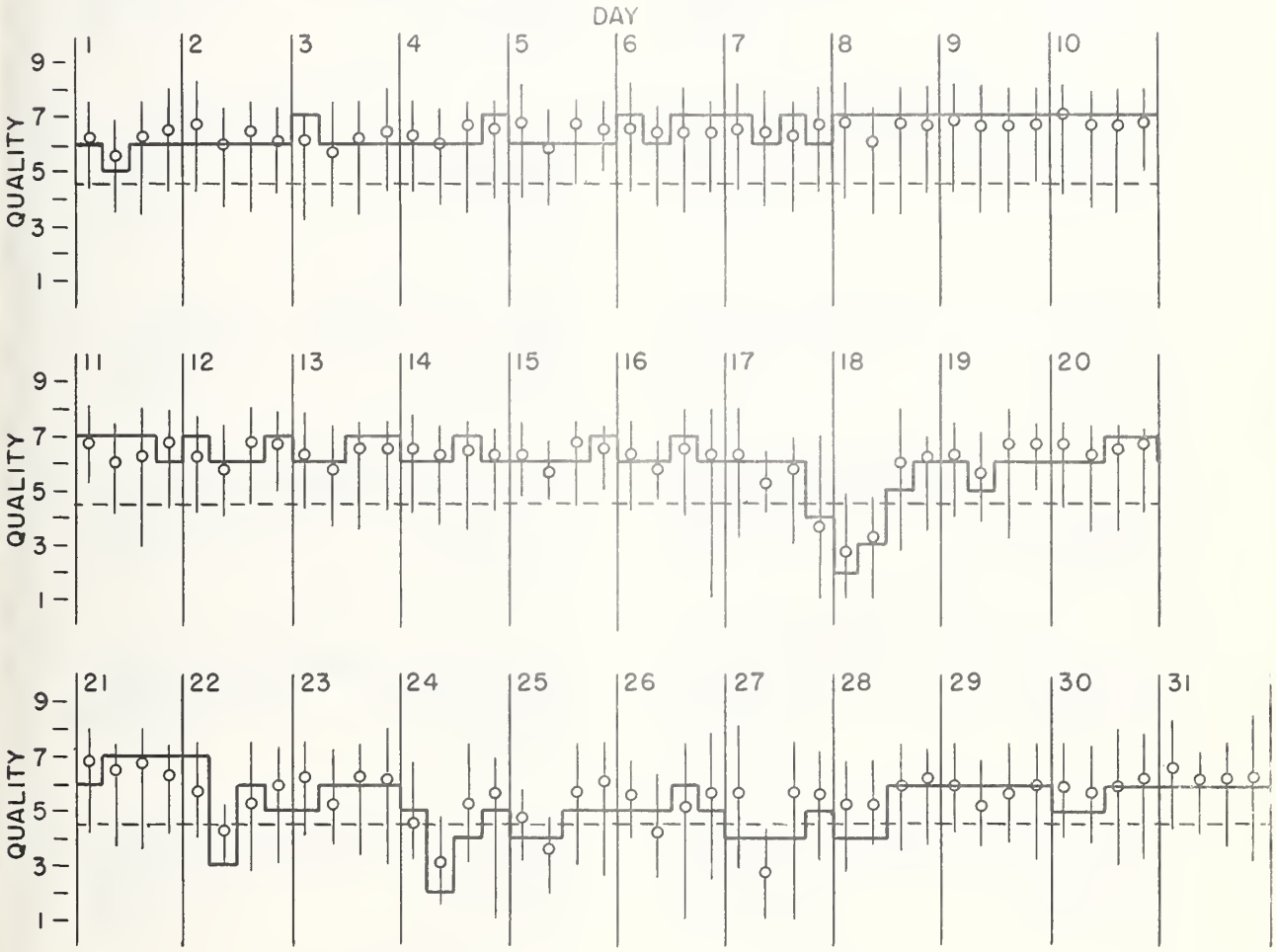
CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC

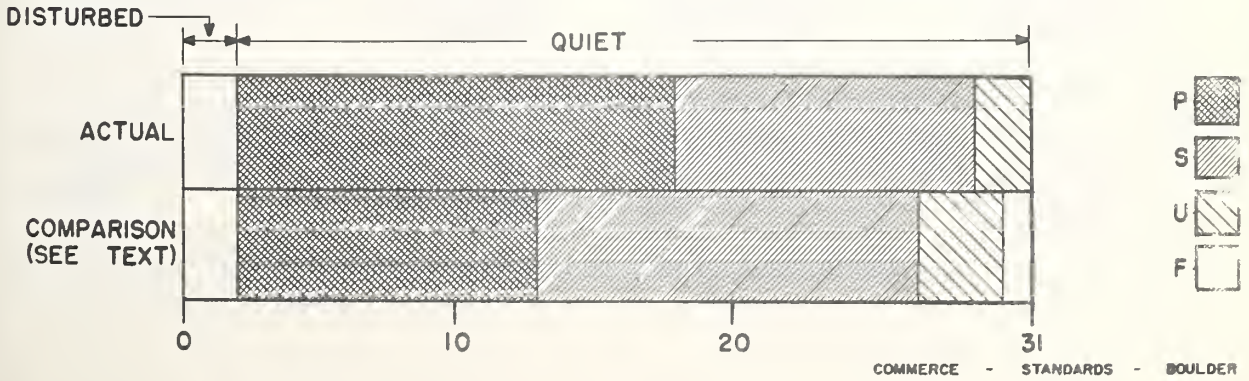
AUGUST 1958

— Short-term forecast | Range of reports

○ Quality figure

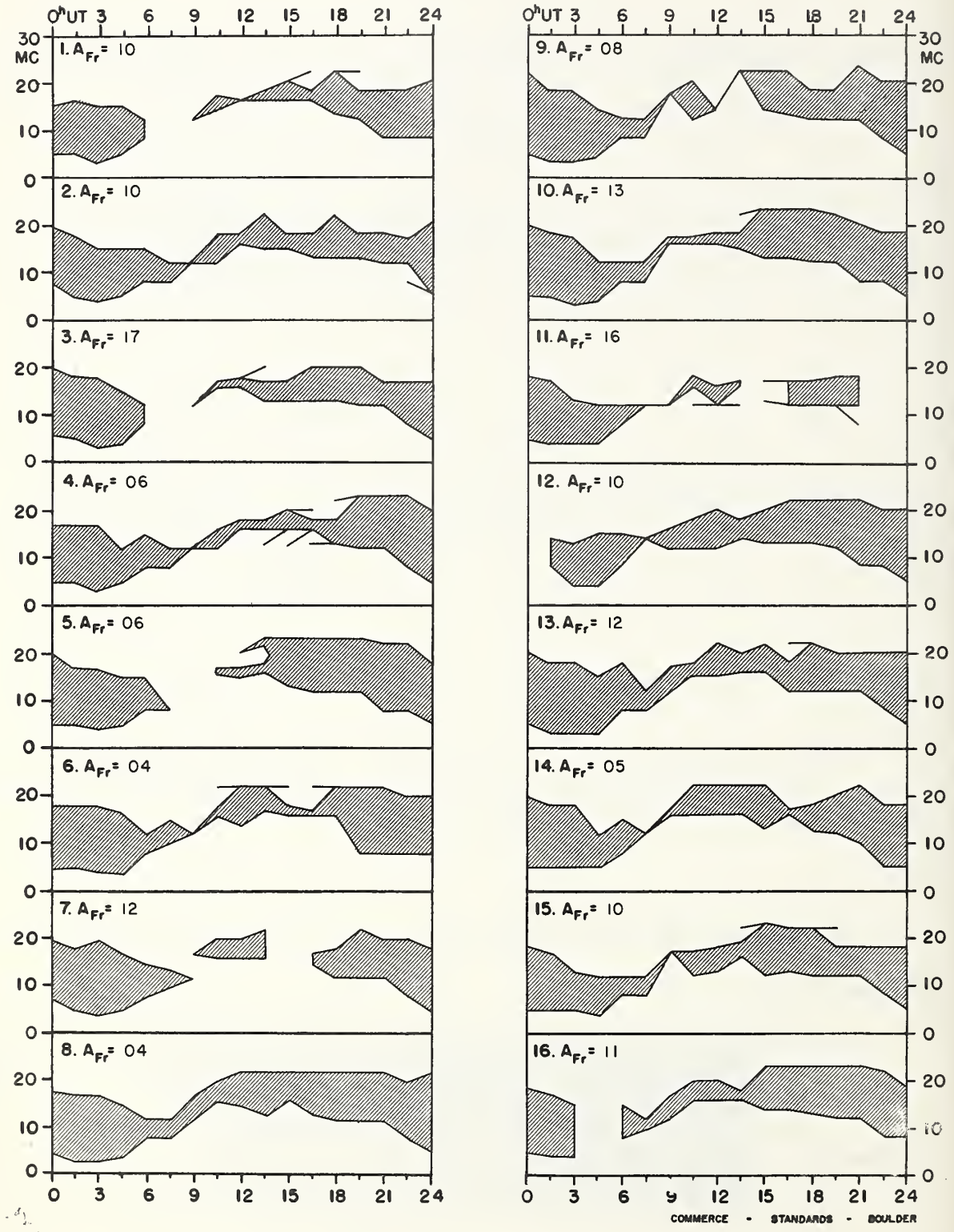


OUTCOME OF ADVANCED FORECASTS 1 TO 4 DAYS AHEAD

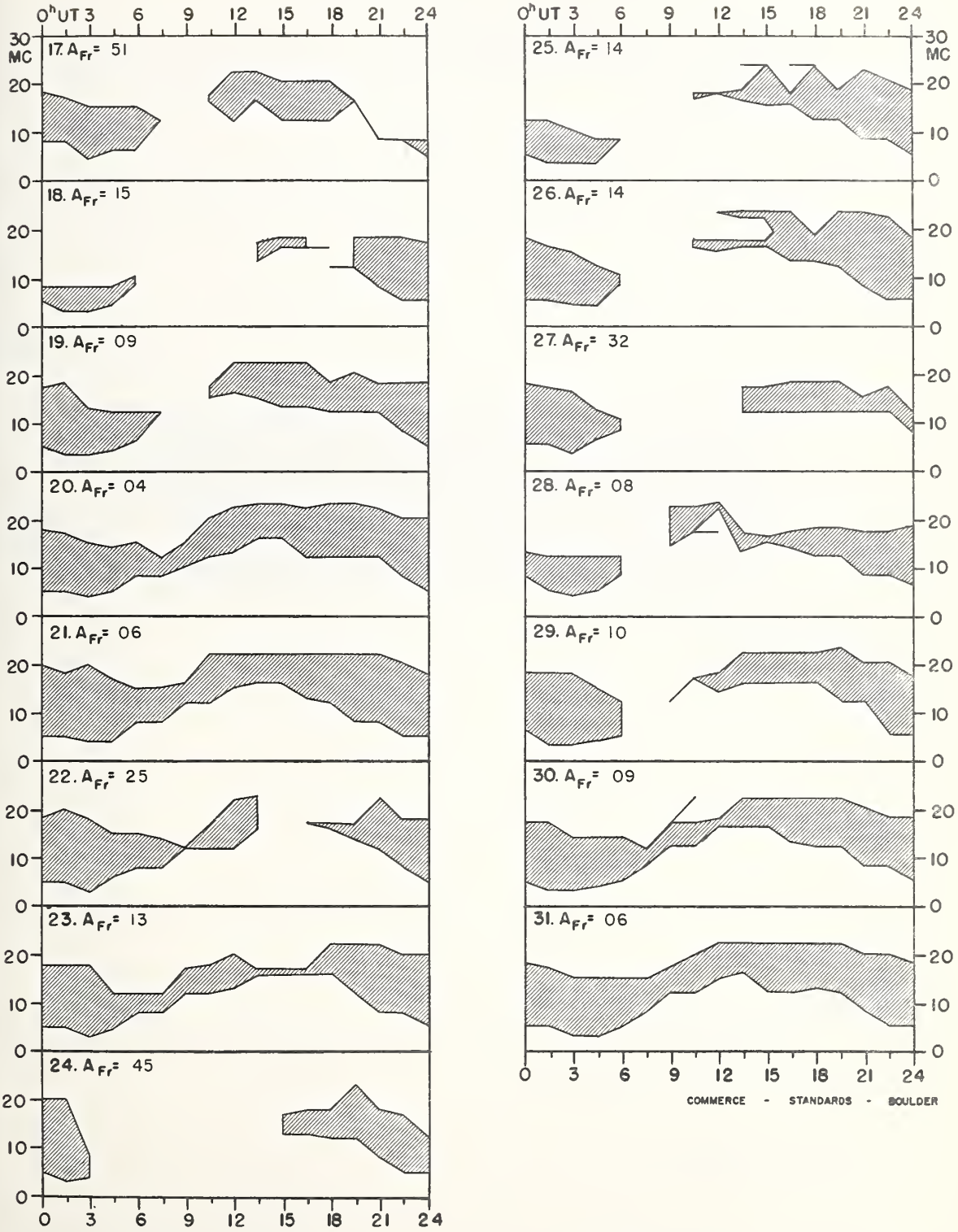


USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

AUGUST 1958



AUGUST 1958



Adapted from Observations by Deutsches Bundespost

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

AUGUST 1958

Aug. 1958	North Pacific 8-hourly quality figures			Short-term forecasts issued at			Whole day index	Advance forecasts (Jp reports) for whole day; issued in advance by:			Geomagnetic K_{Si}	
	03 to 11	11 to 19	19 to 03	02	10	18		1-4 days	4-7 days	8-25 days	Half Day (1)	Day (2)
1	6	6	6	6	6	6	6	4	6		3	3
2	7	6	6	6	7	6	7	6	6		3	3
3	6	6	6	6	6	6	6	6	6		3	2
4	6	6	6	6	7	6	6	6	5		1	1
5	6	6	6	6	6	7	6	7	5		2	1
6	7	6	7	6	7	7	7	6	7		1	1
7	6	6	7	7	6	6	6	6	7		3	2
8	6	6	7	6	7	7	6	6	7		1	2
9	7	7	7	7	7	7	7	7	6		2	1
10	6	6	7	7	7	7	7	7	6		2	3
11	6	6	6	7	5	6	6	7	6		(4)	2
12	6	6	7	7	6	6	7	7	6		3	2
13	6	6	7	6	6	6	7	6	6		(4)	2
14	6	6	6	6	7	7	6	6	6		1	2
15	6	6	6	6	6	6	6	6	6		2	3
16	6	6	6	6	6	5	6	6	7		2	2
17	5	5	4	6	3	4	5	6	7		(4)	(6)
18	5	5	6	5	5	6	5	6	7		(4)	2
19	6	6	7	6	6	6	6	6	7		3	2
20	6	6	6	6	6	7	6	6	7		2	1
21	6	6	6	7	6	6	6	6	7		1	2
22	4	5	6	6	5	5	5	5	7		(6)	3
23	6	6	6	6	6	6	6	3	5		2	3
24	2	4	6	5	3	5	(3)	4	6		(7)	(4)
25	5	5	5	5	6	6	5	5	7		(4)	2
26	6	5	6	6	4	6	6	5	7		(4)	(4)
27	2	3	6	5	2	5	(3)	5	6		(7)	(4)
28	5	6	7	4	5	5	6	5	6		3	(4)
29	6	6	7	6	6	6	6	6	7		2	3
30	6	7	7	6	6	7	7	6	6		2	2
31	6	6	7	7	7	7	7	6	6		2	2

Score:			02	10	18	1-4 days	4-7 days
	Quiet Periods	P	18	16	16	16	7
		S	10	12	13	11	18
		U	0	1	1	0	4
		F	0	0	0	2	0
	Disturbed Periods	P	0	0	1	0	0
		S	0	2	0	1	0
		U	0	0	0	1	0
		F	3	0	0	0	2

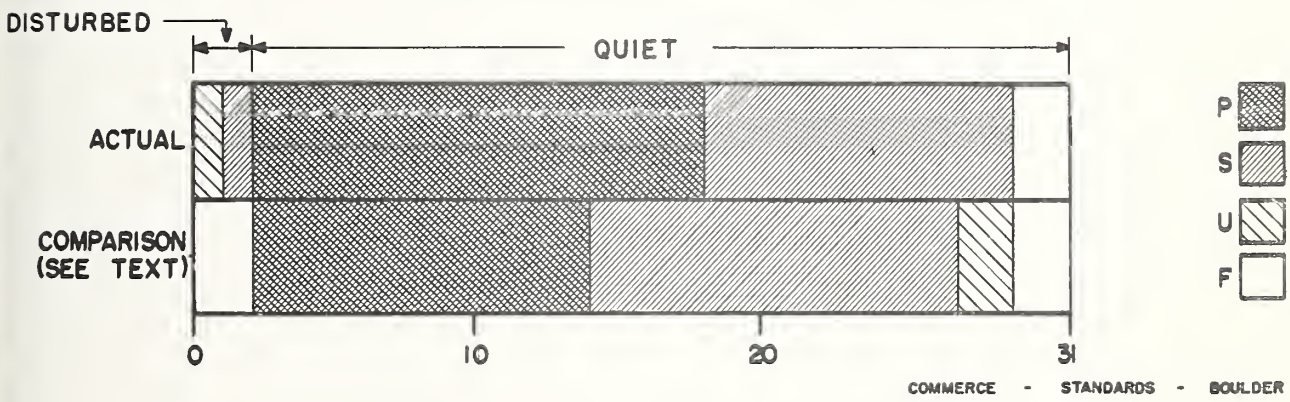
( ) represent disturbed values.

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

AUGUST 1958

OUTCOME OF ADVANCED FORECASTS 1 TO 4 DAYS AHEAD



ALERT PERIODS AND SPECIAL WORLD INTERVALS

Alert Issued Ends 1600 UT 1600 UT	SWI Starts Ends 0000 UT 2359 UT	A_{Be} On Days of Alert Period (SWI Underlined)	Number of Flares of IMP ≥ 2 Reported Promptly on Days of Alert Period
1958			
Sept 10 Sept 18		09-06-05-04-05-05-28-10-04	1-0-3-1-2-6-1-1-2

COMMERCE - STANDARDS - BOULDER