QUARTERLY BULLETIN ON SOLAR ACTIVITY (QBSA)

Director: Kiyoto Shibasaki

1. History

At the meeting of the International Astronomical Union (IAU) in 1928 at Leiden, it was decided to publish a quarterly bulletin of daily variation indices of various solar phenomena. This task was assigned to the Swiss Federal Observatory (Eidgen�ssische Sternwarte Z�rich). **Bulletin for Character Figures of Solar Activity** was initiated in 1928, and its volumes I and II covered the data prior to that year; volume I for the years 1923-1928, and volume II for the years 1917-1922. At the meeting of IAU in 1939 at Stockholm, it was agreed that the publication was given the present name, **Quarterly Bulletin on Solar Activity (QBSA)**.

The data items which once had been but are no longer included in the bulletin are as follows.

Calcium flocculi	1917-1944
dark/bright Halpha flocculi	1917-1944
intensity of ultraviolet (329 nm) radiation	1923-1938
sunspot groups	1947-1948

The data items currrently included in the bulletin were indicated as follows.

sunspot relative numbers	1917
sunspot areas	1956
chromospheric eruptions	1935
coronal intensities	1947
radio emission	1947
synoptic magnetic maps	1969
(changed to color version in	1977)

The aim of publishing the bulletin is to provide a definitive record of selected key data on solar activity in the form of publications. Immediate information on solar activity is covered adequately by other reports and bulletins of a provisional character.

The publication of the bulletin from 1928 to 1976 was undertaken at Z�rich, and then the task had been transferred to the National Astronomical Observatory, Tokyo. The service has been affiliated with FAGS since 1956, and the publication has been continued with the support from FAGS. During the history of QBSA approaching seventy years, the number of contributing observatories increased from 16 to about 135, and the volume of the publications from 20 to more than 200 pages per year.

2. Contents and Data Source of QBSA

In its present form, QBSA contains the following five parts.

I. Sunspots The Tables of sunspot relative numbers and sunspot areas are given under the care of Sunspot Index Data Center, Bruxelles. About 90 observatories contribute to the collection of the data.

II. Synoptic Charts of Solar Magnetic Fields These synoptic charts of solar magnetic fields are constructed from the digital data of the daily solar magnetograms obtained at the 150-foot tower telescope at the Mount Wilson Observatory, Pasadena, U.S.A. Each chart covers one solar rotation and is printed in two colors: black magnetic contour lines represent positive fields and red contour lines represent negative fields (figure 1).

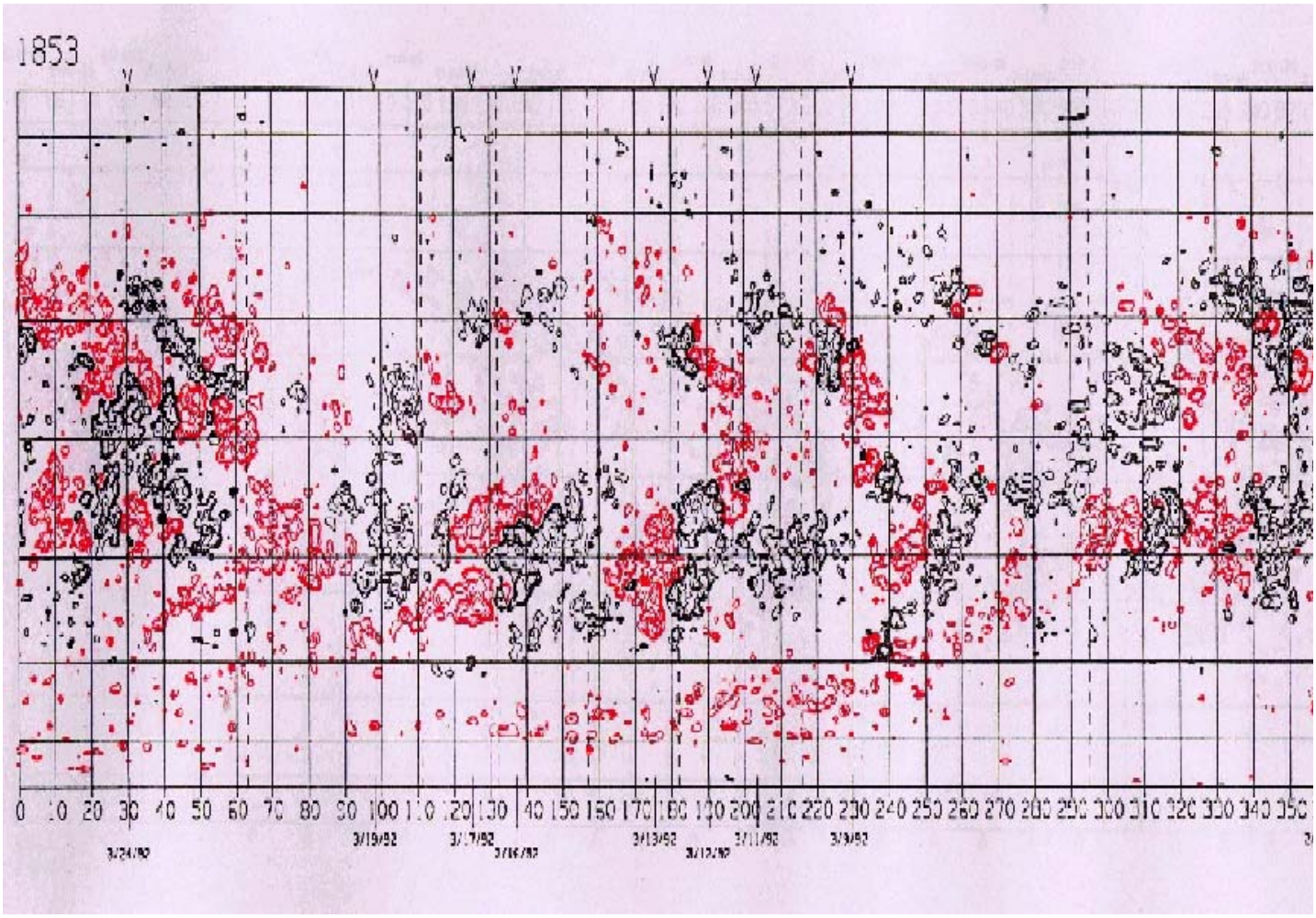

Figure 1: A magnetic synoptic map of the sun for 1992 March

III. Bright Chromospheric Eruptions The flare observations are collected and compiled by Paris Observatory at Meudon. The tabulated data give the time, coordinates, area, importance and additional information on solar flares, and the following observatories are cooperating: Abastumani, Athens, Beijing, Berne, Big Bear, Bucharest, Catania, Culgoora, Haute-Provence, Holloma, Istanbul, Kandilli, Kanzelh&#65533;he, Kharkov, Learmonth, Lvov, Manila, Mitaka, Monte-Mario, Palehua, Purple Mountain, Ramey. Tachkent, Voroshilov (Ussurisk), Wendelstein and Yunnan..

IV. Coronal Intensities The intensities of the coronal lines of 5303 A and 6374 A around the solar limb at intervals of 5 degrees are obtained from the following observatories: Kislovodsk, Lomnicky Stit and Norika. Isophotes of the 5303 A coronal emission line are prepared by the Kislovodsk Station of the Pulkovo Observatory (figure 2).

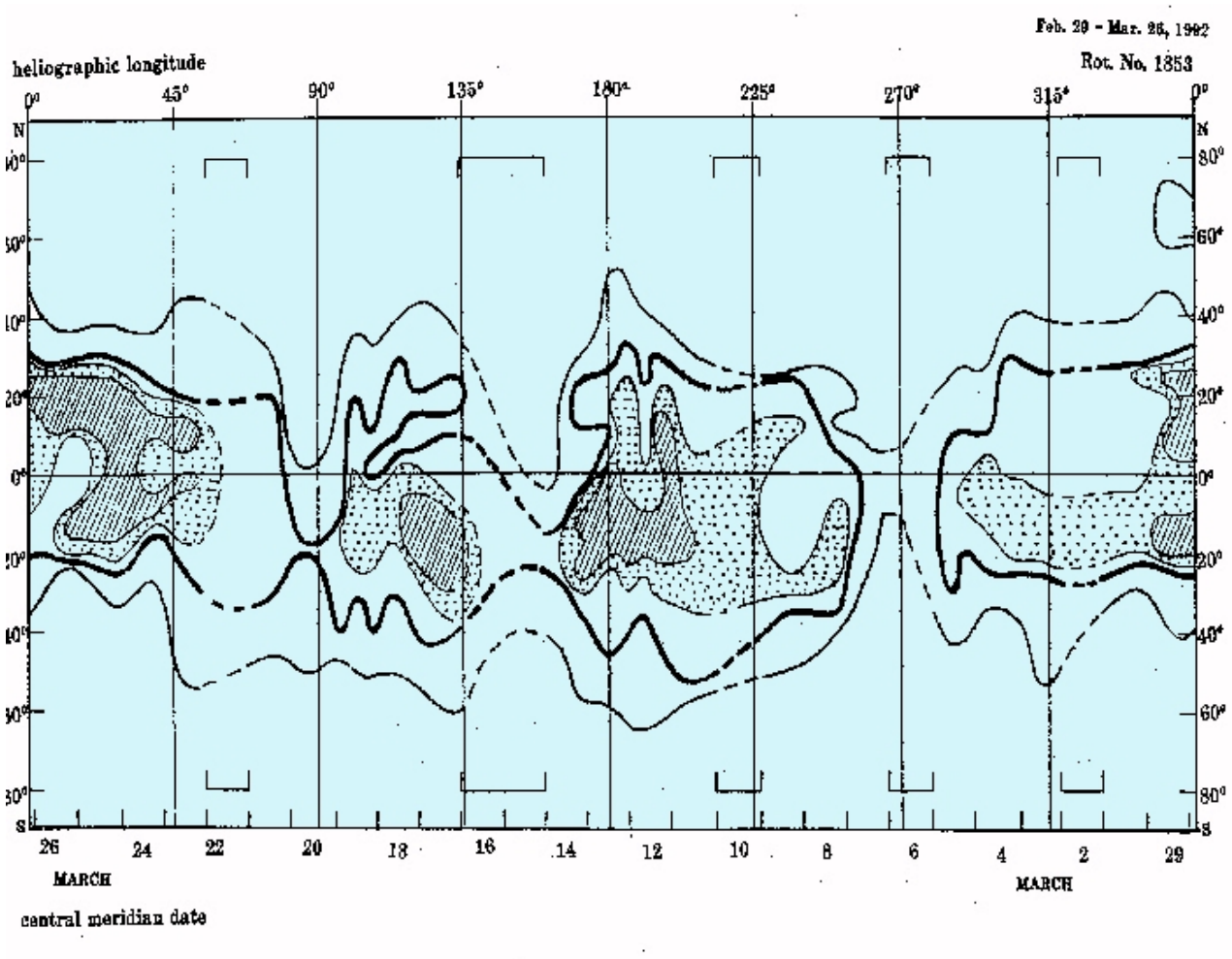

Figure 2: A synoptic map of the brightness of the solar corona for 1992 March

V. Solar Radio Emission The data on radio emission are compiled by Nobeyama Solar Radio Observatory, National Astronomical Observatory, Japan. This part includes daily values of solar flux density at 30 different frequencies ranging from 100 MHz to 15 GHz, and tables of distinctive events. Charts of radio active regions on the sun prepared by Nancay and Nobeyama observatories are also supplemented. Following observatories are cooperating for radio observations: Abastumani, Athens, Beijing, Bleien, Bordeaux, Boulder, Crimea, Culgora, Dominion, Dwingeloo, Fort Davies, Gorky, Harestua, Havana, Hiraiso, Huancayo, Irkutsk, IZMIRAN-Moscow, Kiev, Kislvodsk, Krakow, Manila, McMath Hulbert, Nancay, Nobeyama, Ondrejov, Ottawa, Pennsylvania State University, Potsdam, Sao Paulo, Sagamore Hill, Sydney, Torun, Trieste, Toyokawa, Voroshilov, Yunnan and Wissenau.

3. Distribution

QBSA is mainly distributed free of charge on data exchange basis, but is also sold through the **IUGG Publications Office**, at the price of US $ 30 per year. The following table gives the status of distribution per country as of January 1995.

Argentina	04	Australia	07	Austria	05	Azervaidian	01
Belgium	06	Brazil	04	Bulgaria	04	Canada	06
Chile	02	China	11	Rep. of China	02	Cuba	01
Czech Recpublic	05	Denmark	04	Ecuador	01	Estonia	01
Finland	03	France	22	Germany	38	Greece	07
Hong Kong	01	Hungary	04	India	14	Indonesia	02
Iran	02	Ireland	01	Italy	17	Japan	27
Kazakhstan	02	Korea	01	Korea(DPR)	01	Lithuania	01
Monaco	01	Morocco	01	Mongolia	01	Netherlands	08

Nornway	02	New Zealand	03	Pakistan	01	Peru	02
Phillippines	02	Poland	04	Portugal	02	Romania	02
Russia	12	Saudi Arabia	01	Slovakia	05	Slovenia	01
Sri Lanka	01	South Africa	02	Spain	08	Sweden	04
Switzerland	10	Thailand	01	Turkey	03	Ukraine	06
United Kingdom	20	U.S.A.	76	Uruguay	02	Uzbekistan	01
Venezuela	03	Viet Nam	01				

Back to the FAGS home page

For further information link to the OBSA homepage : http://solar.nro.nao.ac.jp/qbsa

or contact:

Prof.Dr. Kiyoto Shibasaki
Director QBSA
Nobeyama Radio Observatory
National Astronomical Observatory
Minamimaki, Minamisaku
Nagano 384-13
Japan
FAX: +81-267-98-4444
e-mail:shibasaki@nro.nao.ac.jp

Quarterly Bulletin of Solar Activity

Japanese

- **OUTLINE**
- **Back numbers (gif formatted files)**
  - **Part I - Sunspot Relative Numbers and Sunspot Areas**

    The tables of sunspot relative numbers and sunspot areas are given under the care of Sunspot Index Data Center, Bruxelles. About 90 observatories including those listed below contribute to the collection of the data.
    Altamira, Americana, Ankara, Athens, Attikis, Auckland, Australian Obs., Berlin, Beyazit, Bodenteich, Boom, Boulder, Bruxelles-Uccle, Bucharest, Buenos-Aires, Campinas (Capri Obs.), Caracas, Catania, Cochabamba, Culgoora, Dinant, Dover, Grimebergen, Holloman, Helwan, Invercargill, Inzernhagen, Jeddah, Kandilli, Kanzelhhe, Kawaguchi, Kavlinge, Kayeme, Kiev, Kislovodsk, Langemargk, Learmonth, Locarno, Lunping, Agr. Madrid, Marcq en Baroeul, Mie, Mons, Mosta, Museros, Naxxar, Nijmegen, Oostende, Potsdam, Palea Pentli, Palehua, Prades, Pulligny, Pyong Yang, Quezon-City, Ramey, Roma, Ronse-Renaix, Roguetas-Tortosa, San Jose, San Miguel, Santiago, Skalnate-Pleso, Suwa, Taipei (Obs.), Taipei (Weather-Bureau), Tangjungsari, Tashkent, Tokyo (National Science Meuseum), Tokyo (Mitaka), Trieste, Urawa, Valencia, Vedrin Vivy, and Wittelsheim.

    1977, 1978, 1979
    1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989
    1990, 1991, 1992, 1993, 1994, 1995

    - Sunspot Index Data Center (SIDC) (Observatoire Royal de Belgique)
  - **Part II - Synoptic Charts of Solar Magnetic Filelds**

    These synoptic charts of solar magnetic fields are constructed from the digital data of the daily solar magnetograms obtained at the 150-foot tower telescope at the Mount Wilson Observatory, Pasadena, U.S.A.. Each chart covers one solar rotation and is printed in two colors: black magnetic contour lines represent positive fields and red contour lines represent negative fields.

    1977, 1978, 1979
    1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989
    1990, 1991, 1992, 1993, 1994, 1995
  - **Part III - Eruptions Chromospheriques Brillantes**

    The flare observations are collected and compiled by Paris Observatory at Meudon. The tabulated data give the time, coordinates, area, importance and additional information on solar flares, and the following observatories are cooperating:
    Abastumani, Athens, Beijing, Berne, Big Bear, Bucharest, Catania, Culgoora, Haute-Provence, Holloman, Istanbul, Kandilli, Kanzelh\"ohe, Kharkov, Learmonth, Lvov, Manila, Mitaka, Monte-Mario, Palehua, Purple Mountain, Ramey, Tachkent, Voroshilov (Ussurisk), Wendelstein, and Yunnan.

1977, 1978, 1979
1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989

- **Part IV - Intensities of The Solar Corona**

  The intensities of the coronal lines of 5303 A; and 6374 A; around the solar limb at intervals of 5 d egrees are obtained from the following observatories: Kislovodsk, Lomnicky Stit, and Norikura. Isophotes of the 5303 A; coronal emission line are prepared by the Kislovodsk Station of the Pulkovo Observatory.

  1977, 1978, 1979
  1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989
  1990, 1991, 1992, 1993, 1994, 1995

- **Part V - Solar Radio Emission**

  The data on radio emission are compiled by Nobeyama Solar Radio Observatory, National Astronomical Observatory, Japan. This part includes daily values of solar flux density at about 30 different frequencies ranging from 100 MHz to 15 GHz, and tables of distinctive events. Charts of radio active regions on the sun prepared by Nancay and Nobeyama observatories are also supplemented. Following observatories are cooperating for radio observations: Abastumani, Athens, Beijing, Bleien, Bordeaux, Boulder, Crimea, Culgoora, Dominion, Dwingeloo, Fort Davis, Gorky, Harestua, Havana, Hiraiso, Huancayo, Irkutsk, IZMIRAN-Moscow, Kiev, Kislvodsk, Krakow, Manila, McMath Hulbert, Nancay, Nobeyama, Ondrejov, Ottawa, Pennsylvania State University, Potsdam, San Paulo, Sagamore Hill, Sydney, Torun, Trieste, Toyokawa, Voroshilov, Yunnan, and Wissenau.

  1977, 1978, 1979
  1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988

Back to NSRO homepage

updated on July 18, 1999