

3 The Instrument

The two spectrometers are illustrated schematically in Fig. 3. The low frequency system is composed of a standalone active dipole that operates from approximately 20-70 MHz. The high frequency system is composed of an antenna mounted at the vertex of the Green Bank 13.7 m antenna operating from 70-300 MHz, and a feed mounted at the Cassegrain focus operating from 300-1050 MHz. A parallel data acquisition system operating from 50-850 MHz (the ETH/Zürich Callisto spectrometer) will also be supported.

4 Data Access

SRBS data are available to the community for browsing and download in a variety of formats from

<http://www.nrao.edu/astrores/gbsrbs>

Snapshots of the home page and data request page are reproduced in Fig. 4.

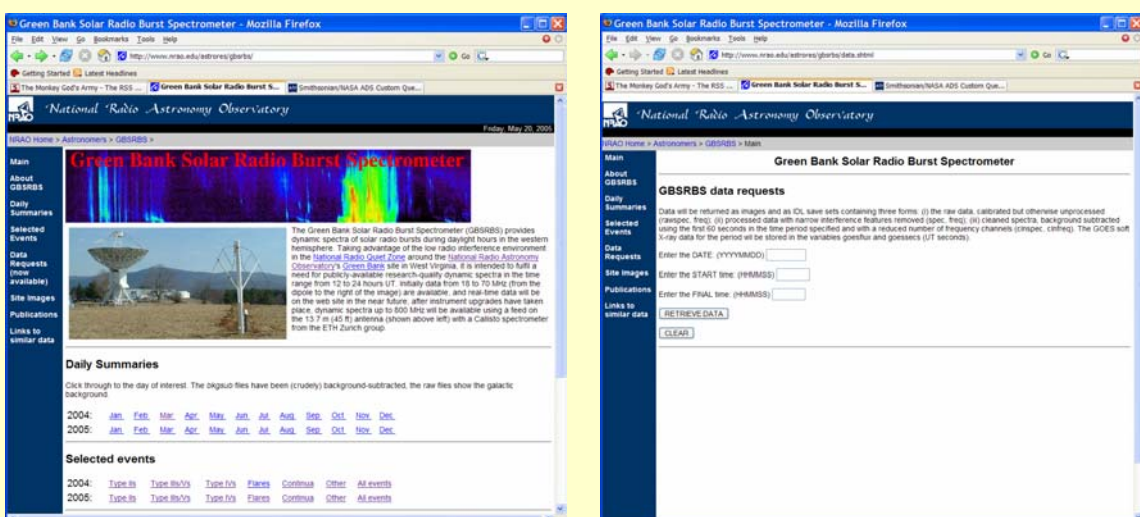


Fig. 4 Home page (left) and data request form (right) of the GB/SRBS web site. Data are available from January 2004 to the present from the low frequency spectrometer (20-70 MHz). Beginning in summer, 2005, data from 20-1050 MHz will be available. Data are available in both image (.ps and .png) and digital (IDL save sets) formats.

5 Examples

Examples of meter wavelength bursts observed by SRBS during 2004-5 are shown in Fig. 5. An example of a type II radio burst observed jointly by SRBS on the ground, and WIND/WAVES and Cassini in space is shown in Fig. 6.

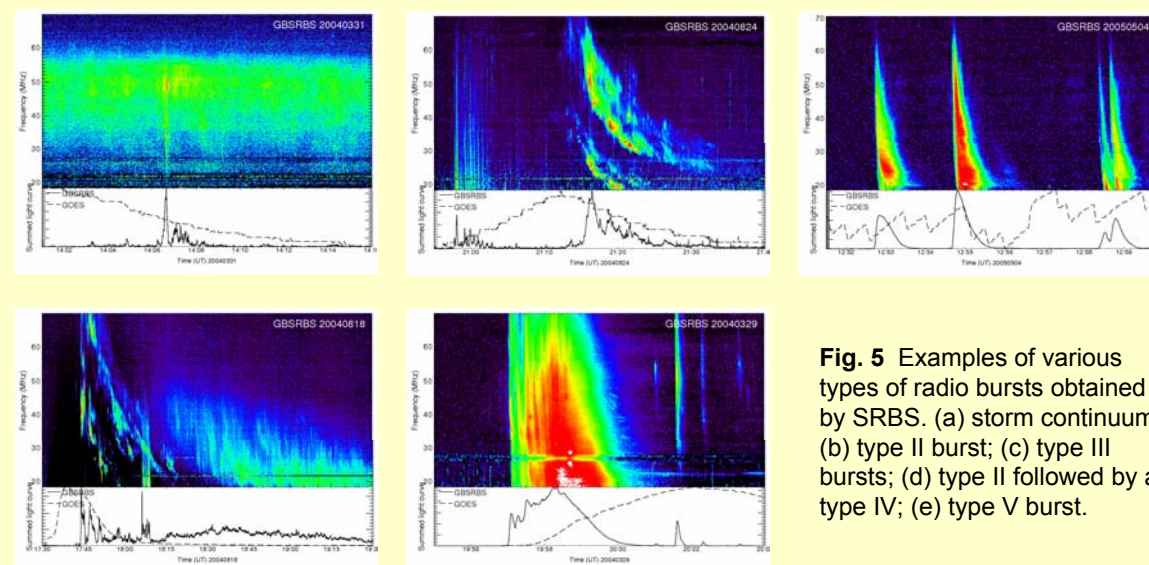


Fig. 5 Examples of various types of radio bursts obtained by SRBS. (a) storm continuum; (b) type II burst; (c) type III bursts; (d) type II followed by a type IV; (e) type V burst.

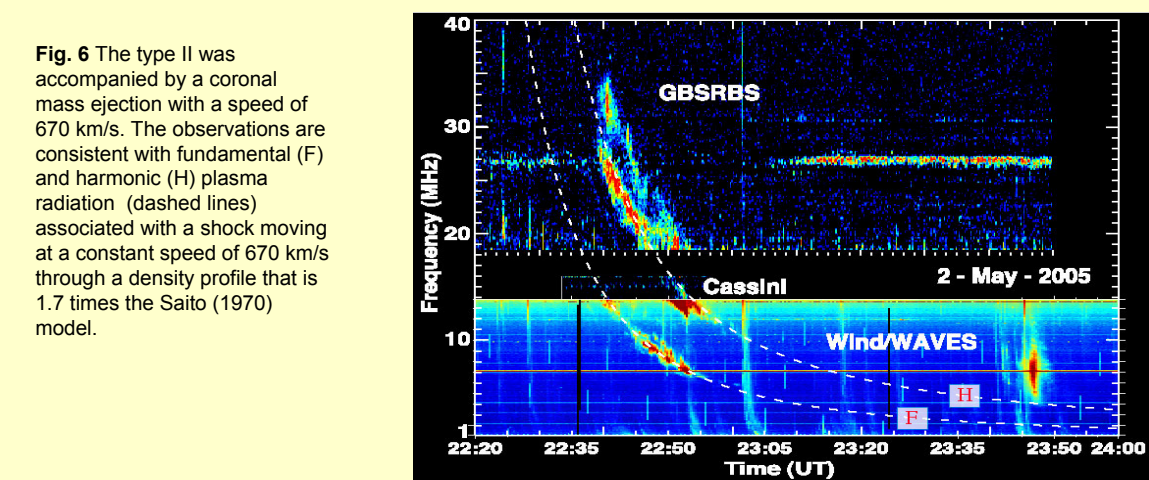


Fig. 6 The type II was accompanied by a coronal mass ejection with a speed of 670 km/s. The observations are consistent with fundamental (F) and harmonic (H) plasma radiation (dashed lines) associated with a shock moving at a constant speed of 670 km/s through a density profile that is 1.7 times the Saito (1970) model.

6 Development

The SRBS project is also being used as a development platform for ultra-wideband amplifiers and feeds for use with the FASR instrument, currently in the planning stages. FASR is a radioheliograph designed to perform ultra-wideband dynamic imaging spectroscopy. The wideband feed system for SRBS is shown in Fig. 7 as well as a prototype sinuous feed that may replace it.



Fig. 7 Examples of ultra-wideband feeds. Left: the 300-3000 MHz feed for use on the 13.7 m telescope for the high frequency SRBS system. Right: a prototype sinuous feed under consideration for use on FASR antennas.



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