conditions prevailed. We held one workshop in order to get organized and begin collaborations. The planned studies will include determining the plasma parameters in various coronal structures and in modeling the structure of the coronal magnetic fields. In addition, we had the opportunity to study how a "sigmoidal" active region evolved as it crossed the solar disk and affected the global corona through a series of flares and eruptive events, and to obtain detailed observations of its structure over a wide range of heights and temperatures. We will be holding future workshops to analyze the data and work on models. We invite you to participate in this campaign or at least see our current plans for data analysis and modeling.

2.40

**Solar Wind and Magnetic field Observations During Whole Sun Months 2 and 3**

A.J. Lazarus (MIT), A. Szabo (NASA/GSFC), J. A. Linker (SAIC), Z. Mikic (SAIC)

We present observations from the Wind spacecraft of the solar wind and the interplanetary magnetic field made during the second and third Whole Sun Month periods (12-25 Aug, 1998, CR1939 and 18 Aug-14 Sept, 1999, CR1953). We compare those measurements (extrapolated to the solar surface) with synoptic charts of the photospheric magnetic field made from the Wilcox Solar Observatory. In contrast to the clear coronal hole structures seen during the first Whole Sun Month (CR1913), we see multiple sources of higher speed wind during the approach to solar maximum.

2.41

**Prediction of Solar Wind Conditions in the Inner Heliosphere Using IPS Tomography**

P.P. Hick, B.V. Jackson, A. Buffington (UCSD/CASS)

The ability to determine the 3D structure of the co-rotating component of the inner heliosphere, and of the 3D extent and evolution of solar disturbances superposed on this co-rotating background, are of primary importance for effective 'space weather' forecasting.

We developed a tomographic technique that uses remote sensing data to reconstruct a heliospheric solar wind density and velocity model. This enables us to reconstruct the background solar wind as well as solar disturbances in their evolution.

Currently we are testing a real-time forecasting system based on tomographic reconstructions of the solar wind from interplanetary scintillation (IPS) data, available on a daily basis from the Solar Terrestrial Environment Laboratory (STE-Lab) near Nagoya, Japan. The IPS tomography is used to determine velocities at 1 AU where they are compared with in situ observations from Earth-orbiting spacecraft. The tomographic solar wind model is also used to passively 'correct' Stanford magnetic field data from the source outward to 1 AU for comparison with in situ magnetic field data. We show current results from this IPS forecasting system.

The real-time forecasting data are available on a dedicated Web site at http://casswww.ucsd.edu/personal/bjackson/weather.htm.

This work was supported by NSF grant INT-9815377 and AFOSR grant AF49620-97-1-0070.

2.42

**Microwave/Millimeter Wavelength Bursts with Simple Spiky Time Profiles**

M. R. Kundu, S. M. White (Astronomy Department, University of Maryland, College Park), K. Shibasaki (Nobeyama Radio Observatory, NAO, Japan), T. Sakurai (National Astronomical Observatory, Japan)

We report the detection at 17 and 34 GHz of microwave and millimeter bursts which have simple spiky time profiles similar to those found to be common at $\lambda = 3$ mm. These bursts are of short duration, with fast 2 - 4 sec rise time to peak, followed by an exponential decay. These bursts can be of any intensity, from 1 sfo to 10's of sfo; they are very strongly polarized (> 50%), and they have similar properties regardless of the nature of the active region in which the bursts originate. The bursts seem to originate in compact sources which are generally unresolved with 15" and 7" resolution of the Nobeyama Radio Heliograph at 17 and 34 GHz respectively. We provide both direct and indirect evidence that these compact sources are low-lying bipolar loops. The direct evidence follows from the physical appearance of the loop as well as from the bipolar nature of the loop. The indirect evidence follows from the offset in position of the footpoint emission in microwaves and hard X-rays, implying a compact asymmetric loop with microwaves originating from the stronger magnetic field footpoint and the hard X-rays originating from the weaker field footpoint.

2.43

**Observations and Models of a Flaring Loop**

A. Nindos, S. M. White, M. R. Kundu (Astronomy Department, University of Maryland, College Park, MD 20742), D. E. Gary (Physics Department, NJIT, Newark, NJ 07102)

Simultaneous images of a flaring loop at two frequencies are used to model the magnetic structure of the loop and the energy distribution of the radiating electrons. The imaging data were obtained with the VLA at 5 and 15 GHz. Additional spectral data were provided by the OVRO Solar Array at several frequencies between 2 GHz and 15 GHz. At 15 GHz, the flare emission was optically thin and came from the footpoints of the flaring loop, while at 5 GHz the loop itself was outlined. Most of the 5 GHz emission was optically thick and its spatial maximum was close to the loop top. A striking feature of the observations is that the 5 GHz emission does not reach down to the 15 GHz footpoints. We compare the observations with calculations of gyrosynchrotron emission from an inhomogeneous magnetic loop in order to determine the conditions in the flaring loop. The best fit to the OVRO fluxes was reached with a model flaring loop with photospheric footpoint magnetic field strength of 870 G. The thickness of the model loop was small compared to its footpoint separation. The energy spectral index of the energetic electrons was 3.7 and their number density was $7.9 \times 10^7$ cm$^{-3}$. The low and high energy cutoffs of the nonthermal electrons were 8 and 210 keV. The 5 GHz emission in this model is at low harmonics (3 – 7) and harmonic effects are responsible for the weak 5 GHz emission at the footpoints. The absence of electrons above 210 keV is necessary in this model to explain why no emission is observed from the loop top at 15 GHz. That model reproduced well the high frequency part of the OVRO flux spectrum as well as the VLA spatial structure. Thus comparisons between the spatially-resolved observations and models reveal the three-dimensional structure of the loop geometry.

2.44

**First Results from the Upgraded Owens Valley Solar Array**

D. E. Gary (New Jersey Institute of Technology), G. J. Hurford (UC Berkeley), Jeongwoo Lee, P. T. Gallagher (New Jersey Institute of Technology)

The Owens Valley Solar Array (OVSA) has undergone extensive hardware and software upgrades in preparation for the current solar maximum and the launch of HESSI. We present an overview of the now completed upgrade from 5 to 6 antennas, and show first results from the newly expanded instrument.

We show results from several recent flares, as well as multi-frequency maps of active region coronal structure, to demonstrate the improvements now available with the instrument. The data and analysis software are freely available on the web, and we invite all who are interested in working with these data to contact the associated website.