ages in the 1200-1700 Å region show band structures parallel to the equator with fading contrast toward the center and the limb. Spectroscopic observations were made in the 1200-1700 Å (G140L) and 1245-1298 Å (G140M) regions at ~ 5 Å resolution to map the H₂ airglow and the UV absorbers along the STIS slit. Preliminary results indicate that a C₂H₂ absorption signature is clearly observed in the solar ultraviolet reflected spectrum. The ethylene absorption may be mapped to derive variations of the acetylene abundance. The H₂ FUV airglow shows both the fluorescence and the electron impact components. Its spatial variation is described and compared with the expected airglow distribution.

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54.06
Jovian Millisecond Burst Analysis Techniques
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The non-thermal radio emission of Jupiter is since decades a well-known phenomenon exhibiting features on times scales varying from hours to milliseconds. Jovian millisecond (or S-)bursts are closely connected to light-triggered emissions and provide a variety of features in the frequency versus time diagram, the so-called dynamic spectrum. Generally speaking, the averaged properties of these emission structures could be explained by the adiabatic motion (eventually under the influence of local or global parallel electric fields) of electrons along field lines connecting to Jupiter, producing radio emission close to the gyrofrequency by means of the cyclotron maser instability (CMI theory). However, the explanation of detailed S-burst features by physical models is still regarded as an open problem.

Spectral analysis is the dominant process in the investigation of dynamic spectra obtained by radio telescopes. Spectral averaging is necessary in order to get a convergent estimation of the Fourier spectrum. Even highly developed digital receiving systems are limited with regard to frequency and time resolution, leaving the analysis of S-bursts to be done with the results of the Wavelet transform. As can be shown by simulations as well as by real data analysis, specific parts of information - yet hidden in a dynamic spectrum - may provide an important key to the understanding of the corresponding physical process.

54.07
Jupiter’s magnetic field as revealed by the synchrotron radiation belts
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High resolution observations of Jupiter’s synchrotron radiation belts show a well defined maximum of intensity at a radius that ranges from about 1.4 to 1.7 R_J. We compare the observations with calculations of radius, jovicentric latitude and magnetic declination at the magnetic equator on a locus of constant B in three field models. The agreement is generally good, and the discrepancies suggest inadequacies in the field models, particularly at longitudes where the non-dipolar field elements are pronounced.

These observations of the synchrotron radiation pertain to small radii and low latitudes where few or no in-situ data exist. We derive otherwise unobtainable information on the magnetic field at R less than 2 radii and latitude less than 15°.

55.01
LASCO/SOHO Observations of Dust in the Outer Solar Corona
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The solar F-corona emission is comprised of solar radiation scattered by dust particles and thermal radiation emitted from near-solar dust particles. The visible brightness is mainly produced by scattering at medium scattering angles from particles near the Sun and by enhanced forward scattering from particles near the observer. The infrared brightness originates from the thermal emission from hot particles near the Sun. Studies of the F-corona are usually limited by the influence of atmospheric stray light and by difficulties of the separation of the K-corona, produced by sunlight scattered at electrons. The K-corona decreases steeply with increasing elongation and has a smaller contribution to the outer coronal brightness. This outer corona is observed from the SOHO satellite where the lack of atmospheric stray light and an optimized suppression of instrumental stray light in the LASCO coronagraph allow for the detection of the coronal brightness as far out as about 30 solar radii from the center of the Sun. These observations yield the opportunity to study the properties of interplanetary dust in the inner solar system. We will present preliminary results from the analysis of the data from the LASCO C3 coronagraph at distances from 10 to 30 solar radii from the center of the Sun in 3 wavelength intervals between 0.4 and 1.1 micron. We compare the data to brightness calculations in order to discuss the distribution of dust grains in the inner solar system.

The Solar Heliospheric Observatory, SOHO, is a joint scientific space mission developed by ESA and NASA. The Large Angle Spectrometric Coronagraph (LASCO) was developed and is operated jointly by the Naval Research Laboratory (USA), the Max-Planck-Institut für Aeronomie (Germany), the Laboratoire d’Astronomie Spatiale (France) and the University of Birmingham (UK).

55.02
The J- and K-Band Brightness of the Solar F-Corona Observed During the Solar Eclipse on February 26, 1998
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The solar eclipse on February 26 1998 was observed from an open flying aircraft at an altitude of almost 6 km above the Pacific about 800 km southwest from Panama City. The solar F-corona, produced by light scattering and thermal emission from dust around the Sun, was observed with a low atmospheric straylight level in the J and K-band over a field of view of 7 degrees. The data show no indication for the existence of pronounced brightness features in the solar F-corona, such as often discussed as evidence for the existence of dust rings. The shape of the corona is slightly elliptic but symmetric in the north-south direction. The data show a reddening of the coronal brightness compared to the solar spectrum. The color of the F-corona is influenced by the temperature of dust particles, by their spatial distribution, as well as by their size distribution that influences especially the forward scattering that is seen in the corona from dust particles close to the observer. We will discuss the color variation from the solar equator to the solar pole and with distances from the Sun and compare it to models of dust light scattering and thermal emission.