ity is $\sim 6 \times 10^{45}$ ergs sec$^{-1}$ (in the 0.5-4.5 keV band), is clearly
distinguished from the other x-ray features in the Einstein HRI
observation and contributes $\sim 20\%$ of the total x-ray emission
of this system. The northern quasar image, however, is em-
bedded in emission from the arc-like feature. We will present
a detailed discussion of the x-ray observations and their im-
lications for the lensing cluster and the lensed background
quasar.

04.05
Spatially Resolved Spectroscopy of Lyo and C IV in the
Gravitational Lens 2237+430
M.M. De Roberto (York U.), H.K.C. Yee (U. of Toronto)
Spatially resolved, long-slit spectra of components A and B of the gravitational
lens 2237+430 were obtained in Lyo and C IV at the CFHT. For Lyo, A and B
are clearly resolved in both the emission line and continuum. The spectrum of
the two components shows an absorption trough situated $\sim 700$ km s$^{-1}$
receding of the emission-line centroid which is bisected by a narrow emission
feature lying between the two components. It is proposed that this unresolved
Lyman emission component, spatially distinct from the quasars, arises from the
gravitational lensing of a massive star formation region that is associated with
either the host galaxy or a companion galaxy of the quasar which also produces
the absorption system. The C IV spectrum shows neither this unresolved
component nor the double-peaked structure seen so clearly in Lyo. It is sug-
gested that this may be partially the result of contamination from the quasar
component D due to a slight misalignment of the slit. The spatial structure of
the narrow emission features within the Lyo and C IV absorption systems is
consistent with a model in which the emission-line source lies on a cusp of the
inner caustic in the source plane, producing a small arc and a point source in
the image plane which appear as narrow emission features.

Session 5: Corona, Flares and Solar Wind
Display Session, Conference Ballroom/Hall

05.02
3D Driven Reconnection and Solar Flares
H.R. Strauss, D. Rose, V. Naryl (CNS/NYU)
We demonstrate by numerical MHD simulations and analysis
how reconnection occurs in a three-dimensional magnetic
field, which models a flux tube in the solar corona.
Reconnection is driven by motions of the endpoints of the
magnetic field lines, corresponding to flows in the photo-
sphere. The most obvious signature of reconnection is the
development of an intense current sheet extending along
the magnetic field. The current sheet is the site of rapid
magnetic helicity dissipation, which is necessary for
reconnection to occur. For the flows considered here, the
peak current density in the sheet is proportional to the
electric conductivity. In the limit of ideal MHD, the cur-
rent should become infinite. Other signatures of re-
connection, which is not precisely defined in 3D, will be
discussed.

The numerical results indicate that reconnection driven by
photospheric flow is a good candidate to explain solar
 coronal heating and simple loop flares. As a further stage
of this process, we continue the simulation as the current
sheet produces a high pressure filament by ohmic heating.
This filament becomes unstable to ballooning modes, which
break up the current sheet. A theory of ballooning mode
effects on heat transport in the corona will also be
discussed.

05.03
VLA-PHOENIX Observations of Coronal Activity
R.F. Willson, K.R.Lang (Tufts U.) A.O. Benz (Inst. for
Astronomy, Zurich)
The Very Large Array and the PHOENIX Digital Radio
Spectrometer were used to observe solar active regions at
20 and 91 cm wavelength on three consecutive days in July
1990. The high spatial resolution of the VLA was used to
resolve different components of solar noise storms, deci-
metric bursts and Type III bursts, while the high tem-
poral and spectral resolution of the PHOENIX provided
measurements of the drift rate and bandwidth of these
events. The structure of one intense burst, associated
with an M3-class soft X-ray event, showed striking
variations in time, frequency and space, suggesting
complex motions and interactions of coronal structures
at different heights and locations above the flaring
active region. The results of correlational studies with
other flare-related and slowly-varying phenomena, such
as EUV brightenings, filament eruptions and magnetic field
changes are also discussed.

05.04
Microwave and Hard X-ray Diagnostics of Nonthermal Electrons in a
Solar Burst
G.J. Hurford, D. E. Gary and J. W. Bromley (Calsuch)
In principle, the microwave brightness temperature spectrum provides a
direct indication of the ambient solar magnetic field and the column
density and spectral index of the nonthermal electron population. The
simple spatial structure in microwaves of a C6.6 flare of 1988 July 18
at 1626 UT permitted the most complete application of these
diagnostics to date. Observations from 1 to 18 GHz with the
3-element frequency-agile interferometer at Owens Valley yielded size
and brightness temperature spectra that were well-matched to
theoretical expectations and quantitatively consistent with corre-
ponding hard x-ray spectra from HXRBS.