a possibility of using a spectroscopic image converter at atmospheric pressure.

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Mount Wilson and Palomar Observatories, Pasadena, Calif., and United States Naval Observatory Washington, D. C.

Billings, Donald E. and Zirin, Harold. The temperature of prominences in active solar regions.

Kinetic temperatures of solar prominences may be computed by analyzing the profiles of emission lines from atoms of two different atomic weights. Such temperatures have been computed from the emission lines of hydrogen and helium of prominences appearing on Climax coronal spectrograms. The temperatures found are in the range 10,000°–20,000° for many active prominences, in agreement with the computations of many observers. Certain very active region prominences, however, show temperatures equal to and greater than 100,000°.

The mechanism by which hydrogen radiates in $H\alpha$ at temperatures in excess of 100,000° is then discussed. By considering the various radiative and collisional processes occurring in an active, hot prominence we determine the equations of statistical equilibrium for the first five hydrogen levels. Solution of these for the occupation numbers of the levels shows that at a density of 10^{10} atoms per cm^3 or greater, a prominence thread 5000 km thick will produce the observed $H\alpha$ intensity, even though its kinetic temperature is greater than 100,000°.

This work was supported in part by the Office of Naval Research through a contract with the University of Colorado and in part by the Air Force Cambridge Research Center, Geophysics Research Directorate through a contract with Harvard University.

High Altitude Observatory, Boulder Colo., and Harvard College Observatory, Cambridge, Mass.

Burke, B. F. and Franklin, K. L. High resolution radio astronomy at 13.5 meters.

The large "Mills Cross" antenna system of the Carnegie Institution of Washington consists of two crossed 2047-ft. arrays of 66 dipoles each. When used with a phase-switching receiver, the array gives a pencil beam which in the present system is slightly elliptical in cross-section, measuring 1°.6 × 2°.4 at half-power points. During the preliminary testing and adjustment of the apparatus, provisional intensities of the radio sources Cyg A, Cas A, M 1, IC 443, and NGC 1275 have been obtained. These observations, made at 13.5 meters, indicate that all these sources are several times more intense than at wave lengths of 3–4 m, where most of the previous measurements have been made.

A general survey of the sky was begun in the region of $\delta = +22°$, using the cross as a transit instrument. Located in this declination band are the Crab Nebula and IC 443 as well as a weak extended source at about $\alpha = 7h\ 30\ m$. Obscuring this extended source on nine out of thirty transits was a very intense, irregular burst of radio noise. A plot of the right ascensions of the beginning and end of the disturbance, as a function of the date, was compared with a similar plot of the positions of NGC 2392, NGC 2420, Uranus, and Jupiter. There is poor or no correlation with Uranus or the galactic objects; Jupiter, however, exhibits the same right ascension and change of right ascension with time, as the center of the disturbance, this change being due to Jupiter's geocentric motion. It is then concluded that this radio noise is associated with Jupiter. This radiation may originate in events in Jupiter's atmosphere similar to terrestrial thunderstorms. There is some evidence that this phenomenon cannot be observed at a wave length of 7.8 meters. Other information is not yet available.

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Buscombe, W. and de Vaucouleurs, G. Comparison between novae in the Magellanic Clouds and in the Galaxy.

Observations of ten novae in the Magellanic Clouds have been used (1) to compare the relationships between maximum luminosity and rate of decline for novae in the Clouds and in the Galaxy, and (2) to obtain an independent estimate of the distance modulus of the Clouds.

McLaughlin has established the existence of a correlation between the absolute magnitude at maximum, M_0, and the number of days, t_3, in which a nova declines by 3 magnitudes after maximum. Regression lines for the variation of apparent magnitudes of Magellanic Cloud novae with $\log t_3$ were computed by least squares. The most probable relation is

$$m_0 = 7.7 + 2.3 \log t_3. \qquad (1)$$