

Circular No. 5544

Central Bureau for Astronomical Telegrams
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NOVA CYGNI 1992

Y. J. Pendleton, Ames Research Center, NASA, communicates: "R. Gehrz, C. Kaminski, N. Jennerjohn, S. Sandford, L. Allamandola, and I report near-infrared spectroscopy of Nova Cyg 1992 in a 2".7 beam using the Cooled Grating Array Spectrometer of the NASA Infrared Telescope Facility. The spectrum (range 2.9-3.77 microns, resolution 0.018 micron) taken over a 30-min interval on May 29.6 UT showed several prominent emission features. Subsequent high-resolution observations of those features (taken on May 30.6 and May 31.5 over 60- and 90-min intervals, respectively; resolution 0.004 micron) were made with half-channel grating shifts to obtain a complete spectrum. Preliminary analysis shows a fairly smooth continuum due to free-free emission on which are superposed several H emission lines (Pf-epsilon, Pf-delta, and Pf-gamma) and some unidentified emission lines (near 3.08 microns). The lines are resolved and preliminary analyses indicate the following intrinsic line FWHM values: Pf-gamma (3.739 microns), 2400 km/s; Pf-delta (3.29 microns), 3000 km/s. The former is quite symmetric while the latter is asymmetric. Pf-gamma is the strongest line and relative strengths are Pf-gamma/Pf-delta about 1.35 and Pf-gamma/Pf-epsilon about 2. There appear to be two lines blended in the 3.08-micron region and the strength of these features is comparable to the Pf-delta line. There is no evidence for infrared coronal emission at this time. There is, however, evidence of line splitting in the Pf-epsilon line (3.038 microns) at locations up to 7 wavenumbers on either side of the line center. Line splitting may arise from a multiple, toroidal, or clumpy shell structure in the ejecta."

R. Gehrz, T. J. Jones, and G. Lawrence, University of Minnesota, report the following infrared magnitudes obtained with a bolometer system at O'Brien Observatory: May 19.4 UT, J = 7.0, H = 7.2, K = 6.6, L = 5.7, M > 4.9 (3-sigma detection), N > 1.2; May 29.4, L > 4.1.

Further visual magnitude estimates forwarded by the AAVSO:

June 9.92 UT, 8.4 (P. Schmeer, Bischmisheim, Germany); 10.35, 8.5 (P. Collins, Boulder, CO); 10.98, 8.4 (B. H. Granslo, Fjellhamar, Norway); 11.35, 8.7 (Collins).

COMET TANAKA-MACHHOLZ (1992d)

Total visual magnitude estimates (cf. IAUC 5531): June 3.21 UT, 8.5 (R. Donner, Santa Barbara, CA, 0.25-m reflector); 5.99, 9.1 (H. Luthen, Hamburg, Germany, 0.20-m reflector); 11.31, 8.8 (J. E. Bortle, Stormville, NY, 0.32-m reflector).

1992 June 15 (5544) Daniel W. E. Green