

**Central Bureau for Astronomical Telegrams****INTERNATIONAL ASTRONOMICAL UNION****Postal Address: Central Bureau for Astronomical Telegrams****Smithsonian Astrophysical Observatory, Cambridge, MA 02138, U.S.A.****Telephone 617-495-7244/7440/7444 (for emergency use only)****TWX 710-320-6842 ASTROGRAM CAM EASYLINK 62794505****MARSDEN or GREEN@CFA.BITNET MARSDEN or GREEN@CFAPS2.SPAN****NOVA HERCULIS 1991**

T. Iijima, Osservatorio Astrofisico, Asiago, reports: "Optical spectra of Nova Her 1991 were obtained on Mar. 31.2 and Apr. 1.1 UT with the Mt. Ekar 1.82-m telescope and CCD spectrograph (range 386-715 nm, resolution 0.2 nm) at the Astronomical Observatory of Padua. In addition to the features reported on [IAUC 5223](#) and [5227](#), broad emissions are visible at 424.2 (N II), 465.0 (C III), 468.6 (He II), 505.6 (Si II), and probably at 580.2 and 581.2 nm (C IV). The emissions of H I and He I show castellated profiles with at least five peaks, while those of C III and He II show shapes that are smoother."

R. D. Gehrz, T. J. Jones and G. Lawrence, University of Minnesota, provide further infrared magnitudes, obtained on Apr. 10.4 UT with the bolometer on the 0.76-m telescope at the O'Brien Observatory, using a 25" beam: J = 7.5, H = 5.8, K = 4.1, L = 2.8, M = 2.1, N = 1.0. They note that these measurements appear to conform to a 1200-K blackbody, and that measurements in several silicate filters show no evidence for silicate emission. They add that the Mar. 29 observations ([IAUC 5232](#)) indicate that the nova was then in a free-free emission phase.

K. R. Sivaraman, Indian Institute of Astrophysics, Bangalore, telexes: "Nova Her 1991 was observed by T. P. Prabhu, K. K. Ghosh, G. C. Anupama, and G. Selvakumar using CCD spectrographs (range 425-680 nm, resolution 0.2 nm) at the 1.02- and 2.34-m reflectors of Vainu Bappu Observatory, Kavalur, on Apr. 2, 3, and 4. Identified emission lines are H-alpha, H-beta, H-gamma, He I (447.1, 587.6, 667.8 nm), Na I D, N II (566.7, 568.0 nm), Si II (634.7, 637.1 nm), and N II (464.0 nm), with contributions from He II 468.6-nm and Fe II multiplet 42. All lines are broad and show structure. The H-alpha line has FWZI = 5980 km/s, FWHI = 4510 km/s. P-Cyg absorption features are exhibited by H-alpha (-3280, -4010 km/s), H-beta and H-gamma (-3130 km/s), and Si II and He I (-3090 km/s). All line profiles are similar. Prominent peaks in H-alpha are at -1910, -940, -210, +730, and +1560 km/s; additional peaks are present at -1740, -1510, -1220, -780, and +1880 km/s. The blue peaks brightened significantly with respect to the red peaks between Apr. 2 and 4. All the peaks narrowed down with time, revealing fainter structure in between. Strong interstellar lines due to Na I (589.0, 589.6 nm) are seen with equivalent widths 15.0 and 9.0 nm, respectively."

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