

V605 AQUILAE - THE MOST EXTREME HYDROGEN-POOR OBJECT*

Waltraut C. Seitter
 Astronomisches Institut der Universität Münster
 Wilhelm-Klemm-Straße 10
 D-4400 Münster, F.R.Germany

V605 Aquilae, whose novalike outburst was observed in 1919, is the central object of the old planetary nebula A58. It is the only 'nova' known with a hydrogen-deficient carbon-rich outburst spectrum and a remnant consisting of a WC-type star and a nebula which appears to be totally void of hydrogen. The star shows a red continuum of magnitude 22.3 and a prominent line of CIV 580.8 nm with a total width of 4400 km/sec. Other lines are extremely weak. The remnant nebula shows only forbidden lines of heavy elements. The strongest ones are due to the nebular transitions of [OIII],[NII],[OI]. IR [OII] is present, other ions are suspected. The nebula is an IRAS point source of temperature 170 K.

The lack or extreme weakness of most of the classical diagnostic lines permits only very preliminary estimates of the stellar and nebular parameters. The Zanstra temperature is near 70 000 K, the nebular parameters are determined through direct comparison with the properties of A58. Fig.1 shows the spectrum of the remnant nebula and the stellar CIV line. Table I lists the preliminary values for the nebular remnant.

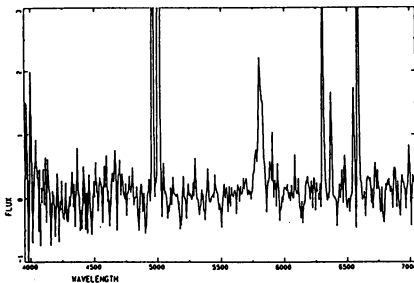


Table I. Nebular parameters

	T.	N.	H	He	CNO	C	N	O
A58	12 800	230	79	20	1	-	-	-
V605	14 000	5·10 ⁴	0	93	7	?	<1	<5

units are K, cm³, number percent.

Fig.1. Spectrum of V605 Aql in 1987 (nebular H α is conspicuously absent).

If V605 Aql is a final helium shell flash object, then, unlike its well-known counterparts in A36 and A78, it sets a time limit of 70 years for evolution after the final flash and thus suggests helium shell burning on a dynamic time scale under total expenditure of hydrogen.

*Based on observations collected at ESO - La Silla, Chile.