



Fig. 4 Position of Cygnus X-3. The 2U catalogue error region is indicated by the light outline. The heavier lines contain the improved Uhuru location region (90%) based upon 14 sightings of the source. Also shown are the positions of the radio source given by Braes and Miley⁹ and the bright star discussed by Gursky¹⁰.

X-ray-radio data that put the Cyg X-1 identification on firm ground¹¹.

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X-ray Observations of Cyg X-3 Near the Time of Radio Outbursts

FOLLOWING the announcement of Gregory *et al.*¹ and Hjellming and Balick² that the radio source identified with Cyg X-3 had undergone a substantial increase in radio flux output some time between August 31, 1972, and September 2, 1972, we made a search through all data available for dates near this event from the Vela 5B spacecraft to determine if any associated increase in X-ray flux could be detected. Scans of the appropriate region of the sky were made on the four dates shown in Table 1. Cyg X-3 lies close enough on the sky to Cyg X-1 that the two sources were barely resolvable with the angular response of the X-ray detectors on the spacecraft; however, estimates of the strength of Cyg X-3 relative to Cyg X-1 were possible. In all cases, the flux observed from Cyg X-3 in the 3 to 12 keV energy range was consistent with the ratio of 1:3 (flux from Cyg X-3/flux from Cyg X-1) reported in previous observations of these sources (for example, Gursky *et al.*³).

Table 1 Journal of Observations

Date	UT
August 25	1408
27	2215
30	0459
30	0510
30	0522
September 3	2119

Any increase in the X-ray flux from Cyg X-3 greater than a factor of two above its previously reported strength should have been detectable in our data, and, with this upper limit, any long-term (≥ 100 h) outburst in the X-ray region of the spectrum from about 8 days prior to 1 day following the increase observed in radio flux seems to be ruled out.

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Cygnus X-3: 3.3 mm Observations

OBSERVATIONS of the early September 1972 flare of the radio counterpart of Cyg X-3 were made at 3.3 mm (90 GHz) with the 4.6-m antenna of the Aerospace Corporation. Observing and data reduction procedures identical to those described by Fogarty *et al.*¹ yielded the 3.3 mm total fluxes (E-W linear polarization) given in Table 1.

Table 1 3.3 mm Fluxes of Cyg X-3

Universal Time	Flux [10^{-26} W m ⁻² Hz ⁻¹]
1972 September 3, 0348-0840	6.2 ± 2.0
1972 September 5, 0244-0914	1.9 ± 1.5