utilized. It is not reasonable to expect regional variations in the reference frame to cancel out. This would require a sufficient number of local calibrators, and even if sufficient numbers could be measured accurately in the radio survey their optical measurement would in general need large telescopes and would only proceed slowly and laboriously.

We do not wish to propose here the adoption of any particular "system", but to emphasize that the time has now come for agreement to be reached between radio and optical workers.

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Two Infrared Sources in Nebulae

In a systematic survey of the Caltech infrared catalogue (IRC)[1], 210 of the 5612 listed sources have been examined optically using the prints of the National Geographic Society–Palomar Observatory sky survey. Several criteria were adopted in the selection of sources for optical examination. Objects were first selected for which no previous identification was listed on the basis of comparison with star catalogues, and which further were very red as indicated by their I (0·84 μm) minus K (2·2 μm) colour index. The reddest sources among these have $(I-K) \geq 6^{m}\cdot00$ and all such cases were examined, whereas for the moderately red objects ($(I-K) \gtrsim 4^{m}\cdot00$) only sources at high galactic latitude ($|b^{II}| \geq 40°$), or lying in the $+40°$ declination zone of the two micron survey, or located near stellar rings[2], were inspected. During the work, a number of infrared stars of $(I-K) \gtrsim 4^{m}\cdot00$ but catalogued as belonging to spectral class B were also located. Examination of the sky survey prints revealed that the infrared object, in sixteen cases out of twenty investigated, was a fainter, very red star lying near the class B star in question. Some further named stars in the catalogue whose right ascension and declination offsets relative to the infrared source exceeded ~ 6 s and/or ~ 1′·2 were also examined, and again in nine cases out of fourteen a more satisfactory identification was made. On the basis of this admittedly small sample of stars with large offsets, it is suggested that such errors of identification may number about 100 stars throughout the catalogue, or about 2 per cent of the total.

Two particularly interesting sources coincided with small nebulae on the sky survey prints, and the main purpose of this letter is to give details of these. The first source is IRC+40091, with $(I-K) = 5^{m}\cdot72$, which has the position[1] (1950) 4 h 26 m 59 s ± 2 s, +35° 10′·2 ± 0′·3. This is identified with NGC 1579 which is a small, irregular, diffuse nebulosity, some 10 arc minutes across, with a prominent dark lane[3], and lies at[4] (1950) 4 h 26·9 m, +35° 11′. Pease[3] describes the brightest part of the nebula as a broad arrowhead; its appearance is very similar to that of the nebula about R Monocerotis. Very close to this cometary nebulosity, in the dark lane, is the faint star Lk Hα-101. Herbig[5] has discussed the source of illumination of the nebula, based on the unusual spectral features of the nebula and this star. He concludes[5] that Lk Hα-101 may be the exciting star if it is "very heavily obscured by dark material in the dark channel", and notes several spectral similarities between NGC 1579 and R Mon. The increasing brightness of the star through the photographic infrared to 2·2 μm seems strong evidence for this obscuration, and the brightness of R Mon at 5 μm, as reported by Low and Smith[6], makes NGC 1579 an object of great interest.

The second source closely associated with nebulosity is IRC+30407 with an $(I-K)$ index of $4^{m}\cdot48$, at[1] (1950) 19 h 59 m 55 s ± 2 s, +33° 22′·4 ± 0′·3. The position of NGC 6857, listed as a planetary nebula by Perek and Kohoutek[7], is (1950) 19 h 59 m 52·0 s, +33° 23′ 12″ and its extent is about 40 arc s. Four sources of radio emission have been detected in close proximity to NGC 685 by Wynn-Williams[8]. One is coincident with this nebula and a second has been shown by Higgs[9] to coincide with K3−50, a neighbouring nebula also listed as planetary. Both authors have interpreted the radio data as implying that these supposed planetary nebulae are in reality compact H II condensations excited by a cluster of OB stars. Elldér, Rönnang and Winnberg[10] have discovered an intense OH emission source at (1950) 19 h 59 m 51 s ± 15 s, +33° 25′ ± 3′, which is evidently associated with this region of nebulosity. It is unusual in that it is strongest in the 1720 MHz line whereas most infrared stars associated with OH emission are strongest in the 1612 MHz line, with little or no emission at 1720 MHz[11].

The recognition of an infrared source in this nebulosity strengthens the existing evidence from the radio observations that NGC 6857 is a region of active star formation.

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Strong New X-ray Object in the Cetus Region

In a recent flight of a Black Brant rocket, AKF-IIIB-51, we have observed a new intense source of X-radiation with a photon flux of 16·9 cm^{-2} s^{-1} in the 1·5–5·0 keV range. The rocket was launched on October 26, 1969, from Resolute Bay, Canada, at 0640 h GMT and reached an apogee of 196 km. It carried two proportional counters nested in a plastic scintillator mould, with their fields of view ($\sim 20° \times 20°$) in opposite radial directions. The detailed experimental configuration was similar to that used in earlier University of Calgary flights[1]. The detec-