

BRIGHT NEAR-INFRARED SOURCES WITHIN 1° OF THE GALACTIC CENTER

Tetsuya Nagata^{1,2}, Shuji Sato³, A. R. Hyland⁴,
and Alan T. Tokunaga²

¹Dept. Physics, Kyoto Univ., Kitashirakawa, Kyoto 606, Japan

²Inst. Astronomy, Univ. Hawaii, Honolulu, HI 96822, U.S.A.

³N.A.O.J., Mitaka, Tokyo 181, Japan

⁴M.S.S.S.O., Australian National Univ., ACT 2606, Australia

A near-infrared survey has been conducted of 0.55 square degrees around the Galactic center with the 1 m telescope of Siding Spring Observatory, Australia. From the detected sources, 39 objects which are bright ($K < 7.6$) and red ($H - K > 1.4$) and 11 objects slightly fainter ($K \approx 8$) have been selected. Subsequently, their 1–20 μm photometry and 2–3.5 μm spectra at a resolution of $\lambda/\Delta\lambda \approx 150$ have been obtained with the IRTF atop Mauna Kea, Hawaii.

Many of the selected objects have strong H_2O absorption at 1.9 μm and 2.7 μm ; they are presumably long-period variables. Other objects with weaker H_2O feature and deep CO absorption at 2.3 μm are probably normal M-type giants and supergiants. The number of such objects is consistent with a usual exponential-disk model, and no particular concentration of supergiants is found from the present observation. In addition to these late-type stars, there are three early-type stars with hydrogen recombination lines, possibly young stellar objects. Furthermore, four objects have been found which show no spectral feature in the K band. These are the two brightest members of the "IR Quintuplet" sources (Kobayashi *et al.* 1983; Okuda *et al.* 1988) and two similar objects a few arcminutes away.

The bright objects can be used as background continua in studying interstellar extinction towards the Galactic center. Many objects show absorption features at 3.0 and 3.4 μm . Since the central wavelength of the 3.0 μm feature is shorter than that of the "ice" feature seen in the sources in molecular clouds (Willner 1984), their origin might be different. The 3.4 μm feature is similar to that seen in IRS7 and other sources in the Galactic center (Butchart *et al.* 1986).

References

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