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A POSSIBLE FIFTH SUPERNOVA (1969) IN THE SPIRAL GALAXY
NGC 6946

A new stellar object (Fig.1) of magnitude 13.9 pg has been observed by the writer 180" South and 5" West of the nucleus of the spiral galaxy NGC 6946 (RA 20^h33^m9; D.+59°58';1950.0) on two photographs taken with the 40-50-100 cm Schmidt telescope of Asiago on Dec.11, 1969 at UT 18^h28^m (Panchro Royal, 15^m) and 18^h46^m (103a-0,10^m). The object was discovered by comparing these plates with a recent pair of photographs, obtained with the same instrument and emulsions, on Dec.20, 1970.

The object was not visible on Dec 1, 1969, neither it was seen in earlier photographs or reproductions of NGC 6946. Schmidt films of Oct 24 and Dec 20, 1970 don't show any trace of it.

In principle, the possibility that the object may be a slowly moving asteroid cannot be ruled out, although its high declination and the absence of elongation or sensible motion on the photographs taken during the night of Dec 11, 1969 weaken this hypothesis. Moreover the star is well inside the galaxy NGC 6946, who is famous for having shown a high rate of appearance of supernovae. The four previously known are:

1917 A	37" W	105" S	14.6 pg
1939 C	215 W	24 N	13.0
1948 B	222 E	60 N	14.9
1968 D	45 E	20 N	13.5

The pg magnitude (13.9) of the new object does not disagree therefore with the magnitudes of the other supernovae found in this galaxy. Unfortunately, in the series of Asiago plates centered in NGC 6946 there is a gap of ten months from Dec 11, 1969 to Oct 24, 1970, during which no photographs were taken. Observations made during this period, and particularly on December-January 1969-70 would be of the utmost importance to decide whether a fifth supernova has appeared in this spiral galaxy or whether it was simply a passing asteroid or a field variable star.

NGC 6946

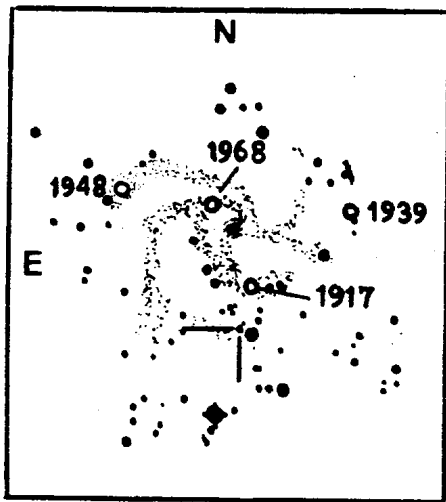


FIG.1

Fig.1 reproduces the identification chart of the object with the approximate positions of the other four supernovae. The new object is situated within the galaxy, over a faint extension of a spiral arm.

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