

A Supernova in the South

Every year, several supernovae are discovered in the northern celestial hemisphere, mainly by astronomers at the Palomar and Asiago (Italy) observatories. These supernovae normally reach magnitude 14–15 during the maximum before the slow decline in brightness sets in. They occur in relatively faint galaxies and it is important to discover them, not only because they represent rare events, but also because spectroscopic studies can reveal the composition of the material that is thrown out into interstellar space from

the exploding star. The statistics show that in a medium-size galaxy like our own, the Milky Way, there is about one supernova per 10–30 years. See also the article about supernova remnants by M. Dennefeld in the *Messenger* No. 13, p. 20.

A new, very faint supernova was discovered on September 23, 1978 by W. Zealey and S. Lee at the UK Schmidt Telescope Unit at Siding Spring, Australia. They found the object on a plate obtained of a field in the constellation Grus. South-west of the bright star Theta Gruis, near a rich cluster of galaxies, they noted the 20^m star, near an interacting pair of galaxies. They later obtained the spectrum of the supernova with the 3.9 m Anglo-Australian telescope, together

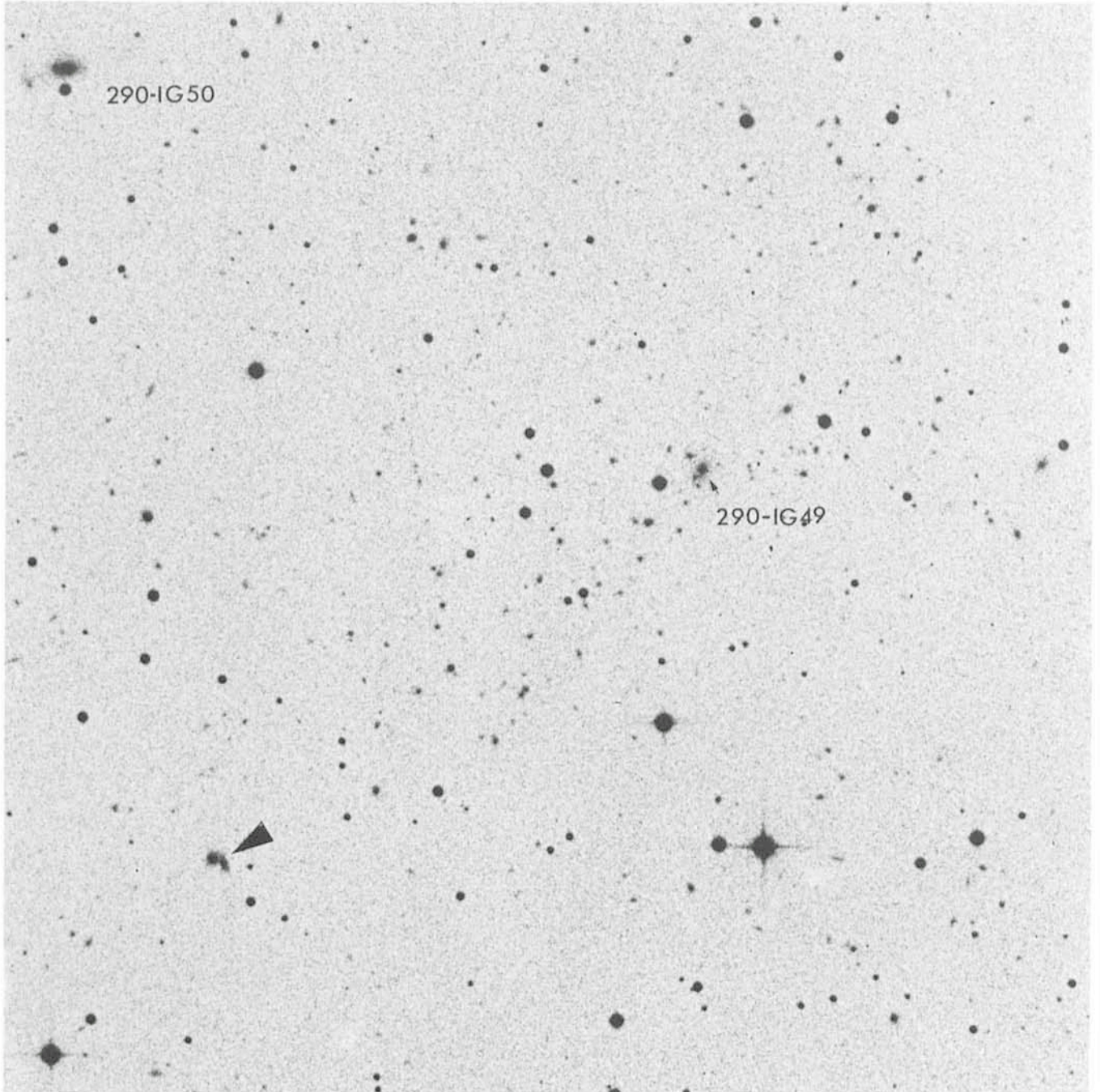


Fig. 1: The field in which the supernova was discovered, reproduced from the 1974 ESO (B) Survey plate (IIa-O + GG 385, 60 min). Two galaxies which have received designations in the ESO/Uppsala survey of the ESO (B) Atlas are indicated. The supernova occurred in the galaxy pair indicated by an arrow. It is not yet known whether they are members of the cluster in which the brightest galaxy is ESO 290-IG 49. The scale is about 1 arcmin mm⁻¹.

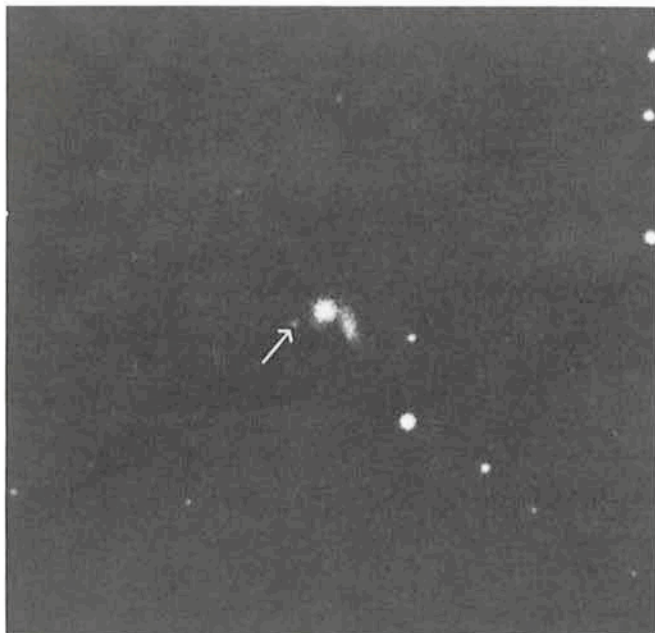


Fig. 2: A small part of a confirmatory ESO Schmidt plate from September 29, 1978, showing the supernova (arrow).

with R. F. Carswell and M. G. Smith. The spectral lines indicate a type I supernova, and another spectrum of the parent galaxies gives a radial velocity of approximately $21,000 \text{ km s}^{-1}$, i.e. a distance of 420 Mpc.

A plate was obtained with the ESO Schmidt telescope on La Silla on September 29.1, on IIIa-F + GG 385, exposure

time 45 min. The broad spectral response ($3900\text{--}7000 \text{ \AA}$) makes it easy to see the supernova, south-east of the interacting galaxy pair.

This supernova is one of the faintest and most distant that has ever been discovered.

List of Preprints Published at ESO Scientific Group

September–November 1978

31. M. CASSE, D. KUNTH, J. M. SCALO: A Constraint on the Influence of Density Waves on the Rate of Star Formation. Submitted to *Astronomy and Astrophysics*.
32. J. MATERNE: The Structure of Nearby Groups of Galaxies: Quantitative Membership Probabilities. Submitted to *Astronomy and Astrophysics*.
33. R. HAEFNER, R. SCHOEMBS, N. VOGT: The Outbursts of the Dwarf Nova VW Hydri: A comparative Study of short and long Eruptions. Submitted to *Astronomy and Astrophysics*.
34. M. SALVATI: Relativistic Corrections in the Theory of Expanding Synchrotron Sources. Submitted to *Astrophysical Journal*.
35. D. KUNTH, W. L. W. SARGENT: A Spectroscopic Survey of the Blue Compact Zwicky Galaxies. Submitted to *Astronomy and Astrophysics*.
36. M. P. VERON, P. VERON: A Study of the 4 C Catalogue of Radio Sources between declinations 20° and 40° . I. 318 MHz Flux Density Measurements. Submitted to *Astronomy and Astrophysics*, Suppl. Series.
37. P. VERON: The Luminosity Function of Seyfert 1 Galaxy Nuclei and BL Lac Objects and the X-ray Background. Submitted to *Astronomy and Astrophysics*.

Construction of ESO Headquarters Building Started



The construction work of the ESO Headquarters building in Garching started in early October this year.

By the middle of November the excavation works were well in progress and some of the foundations were already laid (see photograph).

It is expected that the established time table (with termination in early 1980) can be adhered to.

