terior galaxies; the last one in our own galaxy, the Milky Way, appears to be the one found by Kepler in the constellation Ophiocus in 1604.

Observations at ESO with the 1-m and 50-cm photometric telescopes have shown that supernova 1986 G was still brightening at a rate of about 0.05 mag/day on May 11.2 UT. On this date, the V-magnitude was 11.4 and colour index (B-V) was 1.1 magnitude. CCD images in different colours were exposed at the Danish 1.5-m telescope (cf. the note by Galletta in this *Messenger*). Low-dispersion IDS and CCD spectra have been obtained with the ESO 1.5-m spectroscopic telescope and with the 2.2-m telescope (cf. the note by di Serego Alighieri). They show a typical Type I supernova spectrum before maximum, significantly reddened by absorption in Cen A. Of special interest are very high dispersion spectral observations, obtained with the CASPEC spectrograph at the ESO 3.6-m telescope. The Ca II H and K lines and the Na I D lines show a complicated structure with no less than six very deep absorption components. From a preliminary analysis, it would appear that four of these are caused by absorption of the light from the supernova in four separate interstellar clouds in Cen A. One is due to matter in the Milky Way and one may belong to an intergalactic cloud between Cen A and the Milky Way, the existence of which was surmised in an earlier ESO study of this galaxy (D'Odorico et al., 1985, *Ap. J.* **299,** p. 852).

These observations, and the position near the middle of the dust band, indicate that the supernova is situated well inside the galaxy and that its light is dimmed by about 4 magnitudes due to obscuring dust. Had it been situated in an unobscured region, its magnitude would have been about 7.5, making it the brightest supernova in this century. Due to Cen A's peculiar structure (some astronomers consider it to be the result of a collision among two galaxies), it has not yet been possible to measure an accurate distance to this galaxy. However, if the intrinsic brightness of 1986 G is that of a normal Type I supernova, then the distance to Cen A would be around 2–3 Megaparsec (7–10 million light-years), or only 3–4 times farther away than the Andromeda Nebula. Cen A may therefore even be an outlying member of the Local Group of Galaxies. At a distance of 3 Megaparsec, the total radio energy would be around 10^{58} ergs, corresponding to 10^4 solar masses. Clearly, a most energetic event has taken place in Cen A rather recently; the velocity dispersion of the interstellar clouds may be a relict of it.

The ESO observations are continuing. The following ESO staff and visiting astronomers have participated so far: I. Bues, P.R. Christensen, S. di Serego Alighieri, H. Duerbeck, G. Galletta, L. Kohoutek, P. Magain, P.E. Nissen, D. Reimers, R. Schulte Ladbeck and J. Sommer-Larsen. *The editor*

CCD Observations of Supernova 1986 G in Cen A

G. GALLETTA, Astronomical Institute, University of Padova, Italy

A CCD image of the newly discovered supernova in NGC 5128 was obtained with the Danish 1.52-m telescope on May 8, 1986. By comparison with previous images of the same area it appears that the supernova is located in a luminous portion of the dust band, similar to a hole in the disk of gas surrounding the galaxy (Fig. 1).

This disk and the related dust lane is probably the result of a recent collision with a gas cloud or a gas-rich system, whose age has been estimated to about 3×10^8 years (Tubbs, A.D., 1980, *Ap. J.* **241,** 969). A convincing proof of this is that the rotation axis of the gas coincides with the major axis of the underlying galaxy (Graham, J.A., 1979, *Ap. J.* **232,** 60; Marcelin, M. et al., 1982, *Nature,* **297,** 38) while the stars within the galaxy share a cylindrical rotation around the minor axis (Bertola et al., 1985, *Ap. J.,* **292,** L 51), i.e. perpendicular to the gas rotation axis.

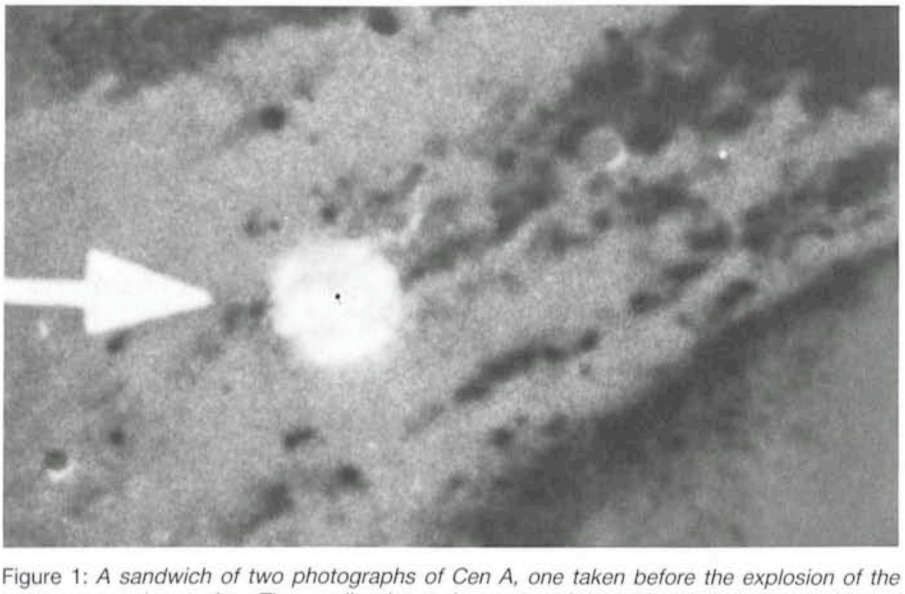

Figure 1: *A sandwich of two photographs of Cen A, one taken before the explosion of the supernova and one after. The small point at the centre of the white circle is the position of 1986 G, as measured on a CCD frame, obtained with the Danish 1.54-m telescope. The diameter of the white circle is about 18 arcseconds.*

On the basis of these investigations, it appears that, in the region where the supernova is located, the mean gas motions relative to the sun are around 340–380 kms^{-1}, but that the stellar motions, extrapolated to the same point, would be around 500 kms^{-1} or more. Accordingly, the supernova in this peculiar galaxy (which is not oblate but triaxial) must belong to the old population of the underlying stellar system, if its velocity is higher than 450 kms^{-1}. However, the velocity of the central object of the supernova can only be measured at a later stage, when it is well past maximum. The interstellar absorption lines which were observed at ESO at high resolution then represent different layers (clouds) in the dust band. On the contrary, if the supernova belongs to the stars connected to the gas disk, its velocity must be lower, but in that case we shall be obliged to revise the age of the collision phenomenon (cf. the article by Tubbs). This hypothesis is also in contradiction with the Type I appearance of 1986 G.

Clearly, it is of great importance to continue the observations of this interesting object.