most important step forward. Firstly, the number statistics could be improved by a significant factor thus allowing to decide whether the description of the IMF by a single power law is really adequate over a large mass interval or not. Secondly, the danger of contamination by merged stellar images is expected to decrease considerably. Thirdly, also older clusters with narrower mass intervals could be investigated in order to uncover the influence of cluster dynamics on the IMF.

The potential of the Magellanic Clouds as "astrophysical laboratories" is still very much alive!

References

Alcaíno, G., Alvarado, F., 1988, *A.J.*, **95,** 1724.

Bencivenni, D., Brocato, E., Buonanno, R., Castellani, V., 1990, ESO Preprint 729.

Bertelli, G., Betto, R., Bressan, A., Chiosi, C., Nasi, E., Vallenari, A., AA Suppl., **85,** 845.

Castellani, V., Chieffi, A., Straniero, O., 1990, *Ap.J. Suppl.*, **74,** 463.

Cayrel, R., Tarrab, I., Richtler, T., 1988, *The Messenger,* **54,** 29.

Elson, R.A.W., Fall, S.M., Freeman, K.C., 1989, *Ap.J.*, **336,** 734.

Jüttner, A., Stahl, O., Wolf, B., Baschek, B. 1991, in "The Magellanic Clouds", IAU Symp. 148, eds. R. Haynes and D. Milne, Kluwer Academic Publisher, p. 388.

Maeder, A., 1990, in "Astrophysical Ages and Dating Methods", eds. E. Vangioni-Flam, M. Cassé, J. Audouze, J. Tran Thanh Van, Publ. Editions Frontières, p. 71

Mateo, M. 1988, *Ap.J.*, **331,** 261.

Richtler, T., de Boer, K.S. 1989, in "Recent Developments of Magellanic Clouds Research", eds. K.S. de Boer, F. Spite, G. Stasinska, Observatoire de Paris, p. 91.

Richtler, T., Sagar, R., Vallenari, A., de Boer, K.S. 1991, in "The Magellanic Clouds", IAU Symp. 148, eds. R. Haynes and D. Milne, Kluwer Academic Publishers, p. 222.

Westerlund, B.E. 1990, *AA R,* **2,** 29.

A "Happy Hour" at ESO Headquarters

On April 30, 1991, on the occasion of the 25th anniversary of Mrs. Christa Euler's services with ESO, the Section Visiting Astronomers had the pleasure to invite all ESO staff, on behalf of the Director General, to a "Happy Hour". The event was celebrated in a friendly and informal atmosphere. A beautiful book on the paintings in the Musée d'Orsay was presented to her by Prof. H. van der Laan, and J. Breysacher gave her a nice bouqet of spring flowers.

Mrs. Christa Euler joined ESO Chile on April 1st, 1966, at the time when Prof. O. Heckmann was the Director General of the Organization. At first she was installed in the office at the Santiago guesthouse and later in the Vitacura building, where she was responsible for all secretarial work in Santiago. Three years later, on the arrival of Prof. B.E. Westerlund, she took over the post of secretary to the ESO Director in Chile. With the exception of a ten-month period spent in the Personnel Department in Hamburg, she held this position until mid-1976. Her definitive move to Europe took place in September 1976. At the newly installed Headquarters in Garching, she took up duty in the Section Visiting Astronomers then headed by Dr. A.B. Muller. During the 15 years that Mrs. Christa Euler has now been working in this Section, she has – among many other things – remarkably handled about ten thousand proposals for observing time and perfectly organized several hundreds of travel arrangements to La Silla. Today her name is familiar to most European astronomers as well as to many others overseas. *J. BREYSACHER, ESO*

Whatever Happened to Comet Halley?

As reported in the last issue of the *Messenger* (No. **63,** p. 22), Comet Halley was found to have undergone a major outburst, seen as a 19-mag cloud surrounding the nucleus in mid-February 1991 on CCD frames, obtained with the Danish 1.5-m telescope at La Silla. At that time, the comet was more than 14 A.U. from the Sun; this was the first time such an event had ever been observed, so far from the Sun. Observations at Hawaii (K. Meech) and Pic du Midi (C. Buil and collaborators) have confirmed the outburst. The French observers used a 61-cm telescope with a CCD, illustrating that Halley had become so bright that it was almost within reach of well-equipped amateur astronomers!

Very deep CCD observations were made at La Silla during March and April 1991, and it is now possible to say more about the nature of this outburst, although the cause has still not been unambiguously identified.

In late February, it was possible to obtain a low-dispersion, low-S/N spectrum of the coma with the 3.5-m NTT. It showed a solar reflection spectrum, which together with the measured colour strongly indicates that the coma mainly consists of dust particles. Still it cannot be excluded that there is a little gas present.

Comparing the many ESO images which were obtained during a 60-day interval, starting on February 12, it is clear that the surface brightness of the cloud progressively becomes fainter while its size increases. At the same time the brightness of the central condensation decreases and it becomes

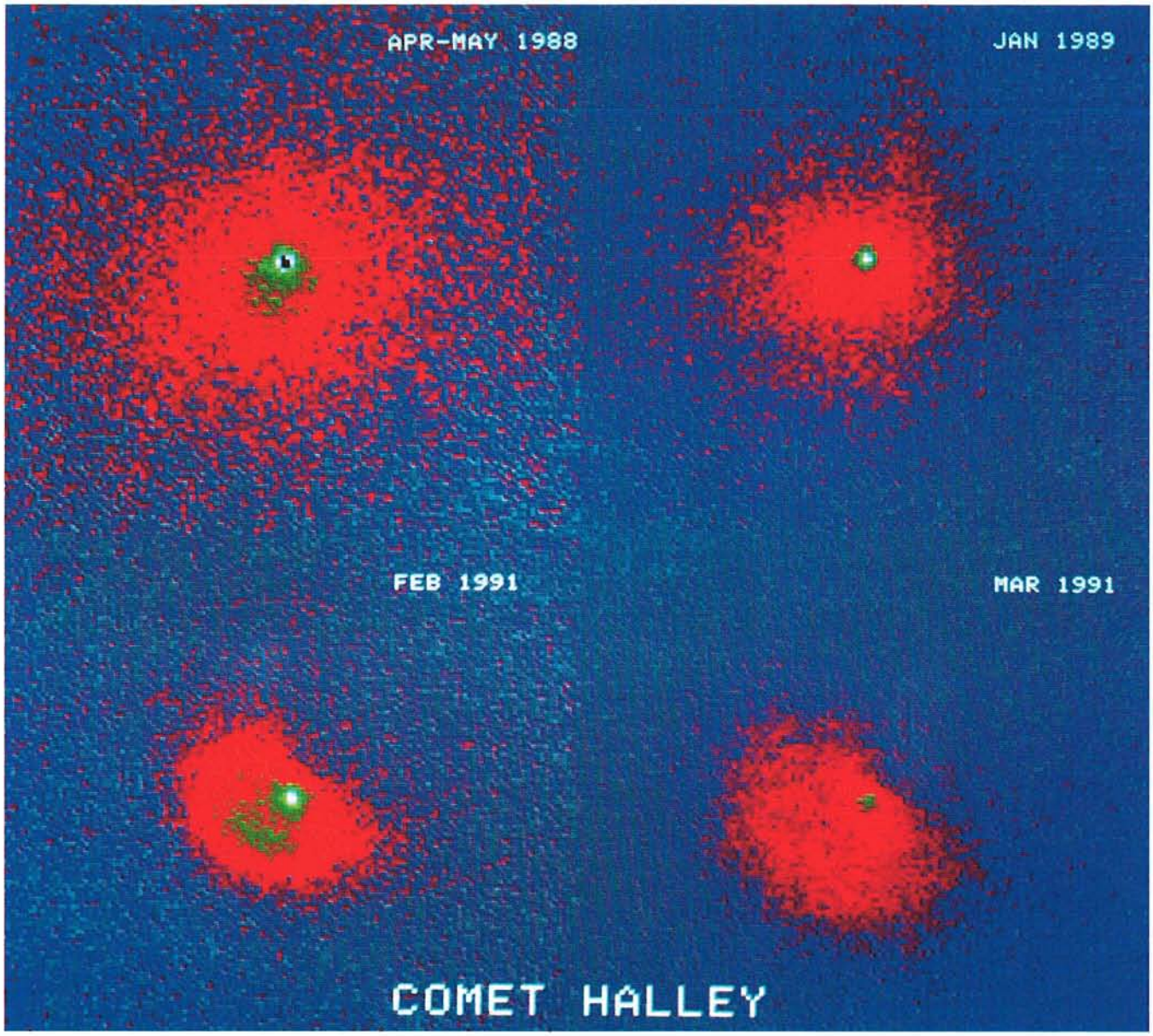
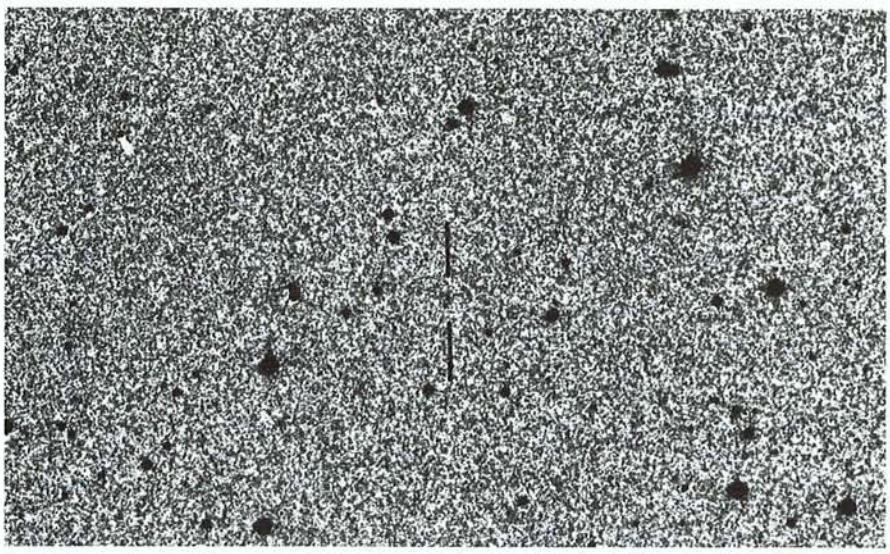


Figure 1: *Halley's coma, as observed in April–May 1988 at heliocentric distance 8.5 A.U. (upper left), in January 1989 at 10.1 A.U. (upper right), in February 1991 at 14.3 A.U. (lower left) and in March 1991 at 14.5 A.U. (lower right). The four images are composites of individually cleaned CCD frames obtained with the Danish 1.5-m telescope at La Silla. They have been normalized to the same flux scale and are reproduced at the same angular scale. To improve the visibility of the faint structures, the images are shown in false colour. The integrated exposure times are 675 min in 1988, 860 min in 1989, 422 min in February 1991 and 1605 min in March 1991. The integrated magnitudes of the entire coma are V = 17.6 (1988), 18.4 (1989), 18.9 (Febr. 1991) and 19.1 (March 1991). North is up and east is left. Each of the four frames measures 1 × 1 arcmin.*



more diffuse. A backwards extrapolation allows to fix the epoch of the "outburst" to December 17±4, 1990. (Some colleagues have jokingly hinted that Halley appears to have celebrated the winter solstice or perhaps Christmas!?) However, it also seems that it would be difficult to eject the entire mass of the cloud, estimated at 10^8 kg, or about 10^{-6}

Figure 2: *This is probably the last photograph that will be made of Halley, before it returns in 2061. The image of the comet is the faint "smudge" near the centre of the picture which was photographically enhanced from a 60-min ESO 1-metre Schmidt blue-sensitive (IIaO + GG385) plate, obtained on January 16.3, 1991. Observer: Oscar Pizarro; photographic work: Claus Madsen.*

of the total mass of the nucleus during a single event. It is perhaps more likely that an initial outburst was followed by a prolonged, steady outflow, producing the cloud seen in Figure 1. It is here compared with the dust clouds seen in 1988 and 1989; note the comparative strength of the 1991 event despite the larger heliocentric distance.

Comet Halley has also been identified on an ESO Schmidt plate which was obtained for another purpose on January 16.3, 1991 (Figure 2). Only the central condensation is seen on the blue-sensitive plate, very near the plate limit. This finding lends support to the above interpretation – it is a pity that apparently no observations have been made sooner after the initial outburst, when the comet would have been even brighter.

We have summarized our early findings in a Letter to the Editor of *Astronomy & Astrophysics* which will soon appear in print. Meanwhile, we have begun a much more detailed study of the observed structure and the development of Halley's coma, together with Zdenek Sekanina (JPL, Pasadena) and Steve Larson (Lunar and Planetary Laboratory, Tucson), both of whom are experts in this field. Perhaps it shall soon be possible to learn something more about the nature of the December 1990 event. Was it – after all – a collision with another, smaller body, or must internal causes be invoked? Whatever the outcome, we shall have learned more about the nature of comets and the conditions in the outer solar system.

O. HAINAUT, A. SMETTE and R.M. WEST, ESO

Recovery of (878) Mildred

After having been "lost" during a period of no less than 75 years, minor planet "(878) Mildred" has finally been found again.

Minor planet "Mildred" was discovered in September 1916 by American astronomers Seth B. Nicholson (1891–1963) and Harlow Shapley (1885–1972) with what was then the world's largest working telescope, the 60-inch telescope at the Mount Wilson observatory near Los Angeles. More observations were made until mid-October 1916 and a preliminary orbit was computed, showing that "Mildred" moves in a rather elongated orbit, just outside the orbit of planet Mars. "Mildred" was given the name of Shapley's infant daughter. Because of the faintness of the object, no further observations were made during the following years, and "Mildred" could not be found again, despite many valiant efforts by astronomers in different countries, and also at ESO in the 1980's.

At the request of Belgian astronomer Eric Elst, ESO night assistant Oscar Pizarro exposed a photographic plate with the ESO 1-metre Schmidt telescope at La Silla on April 10, 1991. When Elst received the plate at his home institute, the Royal Observatory at Uccle near Bruxelles, he found several images of minor planets and within a few days, he transmitted the measured positions to the Minor Planet Center of the International Astronomical Union at the Harvard-Smithsonian Center for Astrophysics in Cambridge, Mass., U.S.A.

Here a young English astronomer, Gareth Williams, on May 24, 1991, performed a most clever piece of "astro-detective" work, which led him to believe that one of Elst's "new" planets, even though it was observed only one night, could possibly be identical to the long lost "Mildred", since its motion in the sky seemed to fit an extrapolation of the 1916 measurements. Williams became almost certain of this when he, in another demonstration of judicious intuition and hard work at the computer, discovered that another single observation of a minor planet made in 1985 by Ludmilla V. Zhuravleva at the Crimean Astrophysical Observatory in the USSR might then also be "Mildred". The final proof of the recovery of "Mildred" came when Williams notified the Siding Spring Observatory in Australia, where Robert H. McNaught found yet another image of "Mildred" on a photographic plate obtained on April 25, 1984 at that observatory. And two days later, astronomers at the ESO Headquarters in Garching identified three more faint images on ESO Schmidt plates, obtained already in 1977.

Mildred Shapley Matthews, for whom the minor planet was named in 1916, still works as an editor at the Lunar and Planetary Laboratory of the University of Arizona, Tucson, U.S.A. She was delighted to hear that her celestial namesake had finally been found again after 75 years.

With the recovery of "(878) Mildred", only one more minor planet is lost, "(719) Albert", which has not been seen since 1911. The recovery of another minor planet, "(1179) Mally" was described in the *Messenger* No. 46 (December 1986), p. 11.

The present photo shows a ~ 90× enlargement of a sky field with the faint image of "Mildred", as exposed on a blue-sensitive ESO Schmidt plate during 60 minutes on June 11, 1977. While the fixed stars are seen as points, "Mildred" moved an angular distance of 40 arcseconds during the exposure and is therefore seen as a short trail, near the centre of the field. The individual photographic grains in the emulsion are seen in the background. *The Editor*