

from the theory (Woosley and Hoffmann (1991) are in the region of 1.5 times the solar value of the ratio for stable nuclides. This deserves some weight because the theoretical models involving nucleosynthesis have been remarkably accurate in their predictions for SN 1987A, and nucleosynthesis results are not very model dependent.

Thus we have gained more confidence that the correct value of $^{57}\text{Co}/^{56}\text{Co}$ has been determined. Consequently, the excess in the bolometric light curve remains unexplained. A pulsar, an accretion disk surrounding a collapsed object, other radioactive species such as ^{22}Na and ^{44}Ti remain candidates, and further observations may in time either confirm or eliminate each or all of them.

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ESO FELLOWSHIPS 1993–1994

The European Southern Observatory (ESO) intends to award up to six post-doctoral fellowships tenable in the ESO Headquarters, located in Garching near Munich.

The main areas of activity are:

- to do research in observational and theoretical astrophysics;
- to carry out a programme of development of instrumentation for the La Silla telescopes and for the VLT;
- to develop future telescopes involving new technology;
- to provide data reduction facilities for users of the ESO instruments;
- to provide photographic facilities for atlases of the southern sky;
- to foster cooperation in astronomy and astrophysics in Europe.

Fellows normally participate in one or more of the above. In addition there is the possibility of participating in the activities of the European Coordinating Facility of the Space Telescope (ST-ECF) which has been established at ESO.

Fellows will normally be required to spend up to 25 % of their time in supporting activities such as the introduction of users to data reduction facilities, remote control operations and testing new instrumentation.

Fellowships are to be taken up between January and October 1993.

Most of the scientists in the Centre come from the Member States of ESO, but several are from other countries. The Member States of ESO are: Belgium, Denmark, Germany, France, Italy, the Netherlands, Sweden, and Switzerland. In addition to regular staff members, the Centre comprises visiting scientists, post-doctoral fellows, and graduate students.

ESO facilities include the La Silla Observatory in Chile with its eight telescopes in the range 0.9 to 3.6 m, as well as a 1-m Schmidt, the 15-m SEST and smaller instruments. In Garching, extensive measuring, image processing and computing facilities are available.

Applicants normally should have a doctorate awarded in recent years. The basic monthly salary will be not less than DM 4827 to which is added an expatriation allowance of 9–12 % if applicable. The fellowship are granted for one year, with normally a renewal for a second year and occasionally a third year. Applications should be submitted to ESO not later than 15 October 1992. Applicants will be notified in December 1992. The ESO Fellowship Application form should be used. Three letters of recommendation from persons familiar with the scientific work of the applicant should be sent to ESO directly. These letters should reach ESO not later than 15 October 1992.

Enquiries, requests for application forms and applications should be addressed to:

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An Intermediate Age Component in a Bulge Field

S. ORTOLANI, *Università di Padova, Italy*

E. BICA, *Universidade Federal do Rio Grande do Sul, Brazil*

B. BARBUY, *Universidade de São Paulo, Brazil*

Much can be learned about the galactic stellar populations and structure from studies of background fields. As yet, bulge field studies have been carried out

along its minor axis. These studies show a dominant old metal-rich population (e.g., Terndrup, 1988).

It would be important to observe also

fields along the major axis in the hope of learning more about the transition halo-disk.

Recently we have studied NGC 6603,

a rich open cluster towards the Galactic bulge ($l=13.8^\circ$, $b=-1.3^\circ$), and its associated field at $5'$ north of the cluster centre.

The observations were carried out at the 1.54-m Danish telescope, using ESO CCD # 5 and the Cousins V and I filters. The reductions were done in a standard way using Midas and Daophot packages at ESO-Garching.

In Figure 1 we show the results for this $5'$ north offset field, where the identified stellar components are labelled. As expected from the low latitude of the field, we see a young main-sequence (MS) coming from the disk. The magnitude range suggests an age spread of about 500 Myrs along the blue MS, as can be inferred from a comparison with a series of colour-magnitude diagrams (CMDs) for galactic open clusters of different ages by Mermilliod (1981). A sequence of red giants parallel to the young MS is present, corroborating this age spread possibility, if differential reddening is not affecting much.

The bulge metal-rich component is revealed by a populous red horizontal branch (HB) typical of metal-rich old populations (e.g., Ortolani, Barbuy and Bica, 1990, OBB90). This sequence is elongated and tilted and this effect is caused by differential blanketing and/or

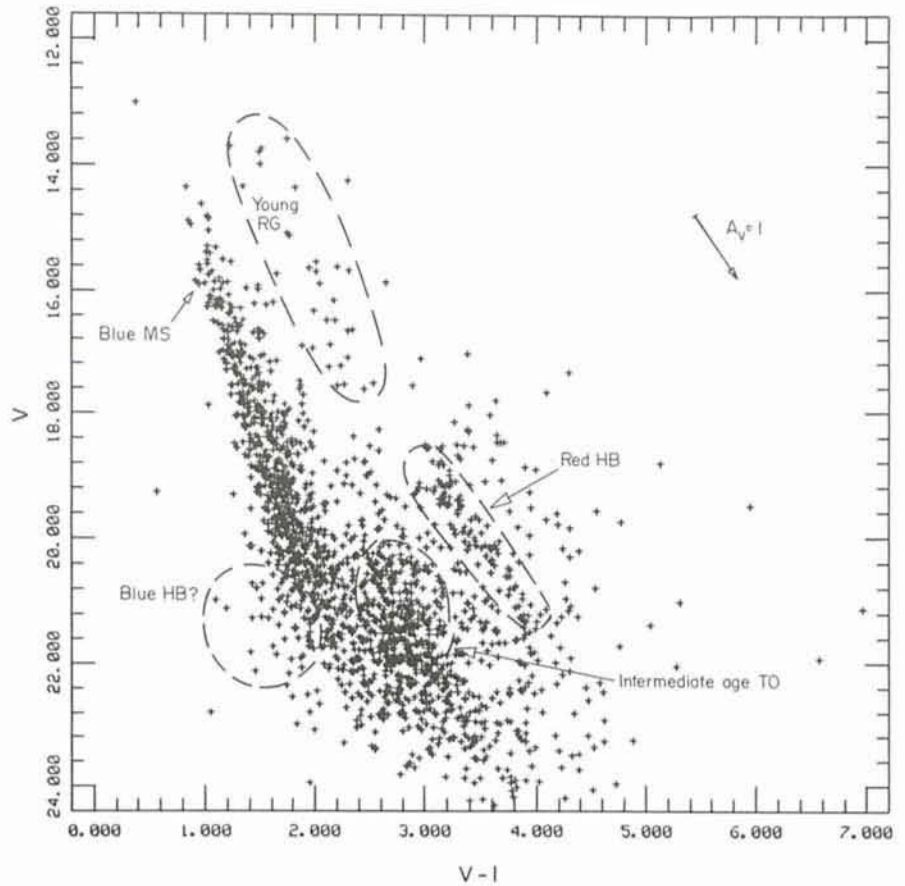


Figure 1: V vs. $(V-I)$ diagram of a field $5'$ north of NGC 6603 ($l=13.8^\circ$, $b=-1.3^\circ$).

VACANCY IN GARCHING

SCIENTIST/ASTRONOMER/PHYSICIST (SOFTWARE)

REF. ESD5A1

A position as Scientist/Astronomer/Physicist (Software) is available in the Science Data and Software Group of the Space Telescope European Coordinating Facility (ST-EFC) at the ESO Headquarters in Garching near Munich, Germany.

The position will be open to a candidate with a University degree in astronomy, physics, or a related field and several years of research experience, including publications in international refereed journals. The research should be based on data obtained with state-of-the-art instrumentation, preferably also with space-based telescopes. Experience with CCD imaging would be an asset. Further requirements are: a strong computer science background, acquired either through formal education or through participation in major computer system development work; a knowledge of relevant computer languages, operating systems, and data analysis systems; ability to work in a team and the willingness to interact with the international HST community. Excellent English language communication skills are mandatory.

Given the availability of the HST Archive at the ST-EFC, with the bulk of the data being generated by the Wide Field/Planetary Camera, the successful candidate is expected to become actively involved in the exploitation of these data, concentrating his/her research activities in this area, and in the development of new software as well as the adaptation of existing software.

The Science Data and Software Group (SDS) of the ST-EFC provides, in collaboration with the ESO Image Processing Group, a state-of-the-art data analysis environment for the European users of HST. This environment is based on a network of UNIX machines, running MIDAS, STSDAS/IRAF, IDL, and a number of other packages with software required for HST data analysis. It is the task of the SDS Group to identify software needs for such analysis either by importing it from the community, or by developing it, and to assist the user community in applying it.

This position will be awarded initially for a period of 3 years, renewable to a maximum of 6 years.

Applications – stating the above-mentioned reference number – should be submitted as soon as possible. Application forms can be obtained from:

European Southern Observatory
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Karl-Schwarzschild-Straße 2
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ESO, the European Southern Observatory, was created in 1962 to . . . establish and operate an astronomical observatory in the southern hemisphere, equipped with powerful instruments, with the aim of furthering and organizing collaboration in astronomy . . . It is supported by eight countries: Belgium, Denmark, France, Germany, Italy, the Netherlands, Sweden and Switzerland. It operates the La Silla observatory in the Atacama desert, 600 km north of Santiago de Chile, at 2,400 m altitude, where fourteen optical telescopes with diameters up to 3.6 m and a 15-m sub-millimetre radio telescope (SEST) are now in operation. The 3.5-m New Technology Telescope (NTT) became operational (VLT=Very Large Telescope), consisting of four 8-m telescopes (equivalent aperture = 16 m) is under construction. It will be erected on Paranal, a 2,600 m high mountain in northern Chile, approximately 130 km south of the city of Antofagasta. Eight hundred scientists make proposals each year for the use of the telescopes at La Silla. The ESO Headquarters are located in Garching, near Munich, Germany. It is the scientific-technical and administrative centre of ESO where technical development programmes are carried out to provide the La Silla observatory with the most advanced instruments. There are also extensive facilities which enable the scientists to analyze their data. In Europe ESO employs about 150 international Staff members, Fellows and Associates; at La Silla about 40 and, in addition, 150 local Staff members.

The ESO MESSENGER is published four times a year: normally in March, June, September and December. ESO also publishes Conference Proceedings, Preprints, Technical Notes and other material connected to its activities. Press Releases inform the media about particular events. For further information, contact the ESO Information Service at the following address:

EUROPEAN
SOUTHERN OBSERVATORY
Karl-Schwarzschild-Str. 2
D-8046 Garching bei München
Germany
Tel. (089) 32006-0
Telex 5-28282-0 eo d
Telefax: (089) 3202362
ips@eso.org (internet)
ESOMC0.:IPS (decnet)

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differential reddening effects. Some bulge giants are also present in the diagram.

To the left of the MS at $V \sim 21$ mag, a clump of possible blue HB might be associated with a metal-poor component (such as low-metallicity globular clusters) or a hot component of the bulge metal-rich population.

An interesting result is the presence of an intermediate age turn-off (TO) at $(V-I) = 2.7$ and $20.4 < V < 22$, which could be interpreted as an old disk/thick disk population, or a bulge-disk transition component. Another possibility is to associate this intermediate age component to a possible bar system in the central parts of the Galaxy (Blitz and Spergel, 1991). This latter possibility is supported

by the fact that an important fraction of the stellar populations in the LMC bar are of intermediate age (Bica et al., 1992).

More fields at different latitudes and longitudes across the bulge would be of great interest to reveal the spatial distribution and ages of stellar populations, in order to better understand the bulge-disk transition.

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