

# UPCOMING CHANGE IN THE SUPPORTED ARCHIVE OUTPUT MEDIA

BENOÎT PIRENNE  
ESO DMD AND ST-ECF

In 13 years of data distribution at the ESO/ST-ECF archive, numerous different sorts of media have been offered to our users: 9-track tape reels, DAT-DDS 1 & 2, Exabyte. Still available today are the DAT-DSS 3 and the DLT 4000 and DLT 7000, as well as CD-R and DVD-R. The reasons for the changes have always been adaptation to the available technology, costs, request size as well as the popularity of the media with our user community. For this reason, every few years, the available choice is reviewed: the older, less popular media are removed and replaced by newer, more appropriate technologies.

We think the time has again come to review the available choice and to reconsider what we offer. If the best technology in terms of costs, convenience and compatibility for exchanging data today is the network, studies carried out recently indicate that with many of our archive "customer" sites in Europe, data requests of only up to a few GB could be served using FTP transfer. As the time of VST, VISTA and ALMA is

approaching, the need for a hard medium to transport and deliver hundreds to thousands of GB of data is still there. Already today, requests for WFI data regularly go beyond 100GB and in this case the transfer using say, tapes, is more appropriate.

However, the tape formats we are using are outdated and suffer from a lack of user-friendliness. Moreover, the newer high capacity models usually impose both the archive site and the recipient of the data to procure expensive drives that do not always guarantee readability. Disks, however, do not impose any specific reading equipment on the user. In recent years, magnetic disks have become very affordable and their individual capacity has increased to a point where they can easily compete with the largest tape units, and without having the tape disadvantages: they allow direct file access, preservation of file names, etc. The advent of the USB disk has brought to life an opportunity to solve our data transport problems. However, if the price of disk drives has gone down significantly in recent years, they

have not yet reached the point where they could simply be given away to users. Recipients of the disks will therefore be required to return them to ESO within a working week.

To make the disks readable on as many computer platforms as possible, we choose to create a file system on the disk so as to make it look like a (very) large CD. In this way, three of the main operating systems used by astronomers could be supported with the same setup: all of Linux, Solaris 8 and MacOS X can easily read the disks that we so produce.

Starting in April 2004, the archive will no longer support tapes as archive data distribution media. The remaining methods to obtain data from the ESO/ST-ECF archive will be -besides FTP- DVD-R and USB/FW disks. More technical details regarding the new system will be published shortly on the archive home page (<http://archive.eso.org/>). A somewhat more detailed account of this policy change was published in the *ST-ECF newsletter*, 35, January 2004.

## ESO - ARCETRI CONFERENCE ON CHEMICAL ABUNDANCES AND MIXING IN STARS IN THE MILKY WAY AND ITS SATELLITES

CASTIGLIONE DELLA PESCAIA (GROSSETO, ITALY)  
SEPTEMBER 13-17 2004

The Fibre Large Array Multi-Element Spectrograph (FLAMES) will produce a large amount of spectroscopic abundances for stars in different environments, from Galactic open clusters to dwarf galaxies in the Local Group, allowing a quantum leap in different astrophysical areas.

At the same time, in recent years significant advances have been achieved in the modelisation and interpretation of observed abundances, in particular as far as stellar mixing is concerned. Mixing phenomena that occur in stars are responsible for the variations of surface chemical abundances throughout the stellar lifetime. Thus, understanding mixing in stars is necessary for a safe use of the observed abundances as tracers of the evolution of galaxies.

The main aim of the workshop is to interpret observed abundances in the framework of the most recent theoretical predictions from the models. The implications for primordial (BBN) abundances, for stellar yields, and for the chemical evolution of our Galaxy and its satellites will also be addressed.

The format of the meeting will consist of invited reviews and talks, contributed talks, and posters.

SOC members: J. Andersen, G. Gilmore, G. Meynet, P. Molaro, L. Pasquini (Co-Chair), N. Prantzos, S. Randich (Co-Chair), R. Rood, C. Sneden, M. Spite, M. Tosi, A. Weiss

Full details and registration information can be retrieved from <http://www.arcetri.astro.it/~cast04/> or by email to [cast04@arcetri.astro.it](mailto:cast04@arcetri.astro.it)

**Deadline for pre-registration:** 15 February 2004

**Deadline for final registration:** 15 May 2004

# PERSONNEL MOVEMENTS

## International Staff

(1 January 2004 - 31 March 2004)

### ARRIVALS

#### EUROPE

ALONSO, Maria Victoria (ARG)	Associate EIS
ANTONIUCCI, Simone (I)	Student
CREDLAND, John (GB)	Head of ALMA Division
LOMBARDI, Marco (I)	Astronomer
LOPS, Roberto (I)	Associate EIS
MACKOWIAK, Bernhard (D)	Education Officer
MAZZOLENI, Ruben (I)	Paid Associate
VUCHOT, Luc (F)	Student

#### CHILE

BLANCO-LOPEZ, Leonardo (F)	Student
COPPOLANI, Franck (F)	Student
DUMAS, Christophe (F)	Operations Staff Astronomer
GUEGUEN, Alain (F)	Student
NAEF, Dominique (CH)	Associate
SMETTE, Alain (B)	Operations Staff Astronomer

### DEPARTURES

#### EUROPE

BREYSACHER, Jacques (F)	Head of Visiting Astronomer's Section
DELMOTTE, Nausicaa (F)	Student
KASTEN, Helga (D)	Technical Draughtswoman
MIGNANO, Arturo (I)	Associate
RAIMONDO, Gabriella (I)	Student

STRIGL, Gisela (D)	Science Archive Operations Specialist
VAN HEST, Frank (NL)	Student
WILHELM, Rainer (D)	Engineer/Physicist

#### CHILE

ERM, Toomas (S)	Electrical Engineer
KERVELLA, Pierre (F)	Fellow
MENDEZ-BUSSARD, René (RCH)	Astronomer
MORELLI, Lorenzo (I)	Student

## Local Staff

(1 December 2003 - 31 March 2004)

### ARRIVALS

AGURTO RUIZ, Claudio	Opto-Mechanical Technician
BOLADOS AROSTICA, Carlos	Opto-Mechanical Technician
DURAN URRUTIA, Carlos	Telescope Instrument Operator
HUERTA CORTES, Rodrigo	Electronics Engineer
INZUNZA PERALTA, Lorena	Telescope Instrument Operator
MARTINEZ PARADA, Mauricio	Telescope Instrument Operator
TORRES CASTILLO, Danilo	Electronics Engineer

### DEPARTURES

ARANDA CONTRERAS, Ivan	Archival Technician
GODOY MUNOZ, Eugenia	Bilingual Secretary
LAGARINI MIRET, Andrea	Executive Bilingual Secretary
NAVEA VILLARROEL, Francisco	Shop Assistant
RIVERA MAITA, Roberto	Temporary Site Testing

## ESO STUDENTSHIP PROGRAMME

The European Southern Observatory research student programme aims at providing opportunities and facilities to enhance the Ph.D. programmes of ESO member-state universities. Its goal is to bring young scientists into close contact with the instruments, activities, and people at one of the world's foremost observatories. For more information about ESO's astronomical research activities please consult <http://www.eso.org/science/>

The ESO studentship programme is shared between the ESO Headquarters in Garching (Germany) and the Vitacura offices in Santiago (Chile). These positions are open to students enrolled in a Ph.D. programme in the ESO member states and, exceptionally, at a university outside the ESO member states. Students in the programme work on their doctoral project under the formal supervision of their home university. They come to either Garching or Santiago for a stay of normally one or two years to conduct part of their studies under the co-supervision of an ESO staff astronomer. Candidates and their home-institute supervisors should agree on a research project together with the ESO local supervisor. A list of potential ESO supervisors and their research interest can be found at <http://www.eso.org/science/sci-pers.html#faculty> and <http://www.sc.eso.org/santiago/science/person.html>. A list of current PhD projects offered by ESO staff is available at <http://www.eso.org/science/thesis-topics/>. It is highly recommended that the applicants start their Ph.D. studies at their home institute before continuing their Ph.D. work and developing observational expertise at ESO. In addition, the students in Chile have the opportunity to volunteer for a small amount of duties (~ 40 nights per year) at the La Silla Observatory. These duties are decided on a trimester by trimester basis, aiming at giving the student insight into the observatory operations and shall not interfere with the research project of the student in Santiago.

**The closing date for applications is June 15, 2004.**

Please apply by: filling the form available at <http://www.eso.org/gen-fac/adm/pers/forms/student04-form.pdf> and attaching to your application:

- a Curriculum Vitae (incl. a list of publications, if any), with a copy of the transcript of university certificate(s)/diploma(s)
- a summary of the master thesis project (if applicable) and ongoing projects indicating the title and the supervisor (maximum half a page), as well as an outline of the Ph.D. project highlighting the advantages of coming to ESO (recommended 1 page, max. 2).
- two letters of reference, one from the home-institute supervisor/advisor and
- one from the ESO local supervisor, and a letter from the home institution that i) guarantees the financial support for the remaining Ph.D. period after the termination of the ESO studentship, ii) indicates whether the requirements to obtain the Ph.D. degree at the home institute are already fulfilled.

All documents should be typed and in English (but no translation is required for the certificates and diplomas).

The application material has to be addressed to:

European Southern Observatory  
Studentship Programme  
Karl-Schwarzschild-Str.2  
85748 Garching bei München (Germany)

All material, including the recommendation letters, must reach ESO by the deadline (June 15); **applications arriving after the deadline or incomplete applications will not be considered!**

Candidates will be notified of the results of the selection process in July 2004. Studentships typically begin between August and December of the year in which they are awarded. In well justified cases starting dates in the year following the application can be negotiated.

Applications are invited for the position of an

## ESO REPRESENTATIVE IN CHILE -HEAD OF THE OFFICE FOR SCIENCE SANTIAGO-

CAREER PATH: VI / VII

**Assignment:** The ESO representative reports directly to the Director General for the ESO representation duties in Chile and regarding the science activities to the Head of Office for Science in Garching. The main task will be:

- The representation of ESO, continuation and further development of the positive working relationships with the Chilean governmental, regional and local authorities where ESO projects are located.
- The representation of ESO's political and legal interests in Chile regarding e.g. property, mining rights etc. in close coordination with the Head of Administration.
- Public relations, media support, exhibitions, educational programmes in close cooperation with the Directors of Observatories and the Education and Public Relation Department.
- The implementation of ESO science policies in Chile, to foster science across all ESO sites in Chile and to support efforts of ESO staff to conduct science at a high level.
- The pursuit and active support of the Fellowship, Studentship, Visitor programmes and the carrying out of scientific exchanges with the Chilean and European community through a strong and attractive Workshop Programme.

As a Senior Astronomer and member of the ESO Science Faculty the postholder is expected and encouraged to actively conduct astronomical research.

**Qualification and Experience:** Basic requirements for the position include:

- a university degree at PhD or equivalent level in physics or astronomy,
- substantial experience in management and leadership,
- an excellent record of achievements in one or more areas of modern astrophysics,
- excellent communication skills and a strong sense of team spirit as well as
- very good knowledge of written and spoken English and Spanish.

Experience in dealing, at a high level, with government departments and agencies, would be an advantage.

**Duty station:** Santiago, Chile.

**Starting date:** 1 January 2005

**Remuneration and Contract:** We offer an attractive remuneration package including a competitive salary (tax free), comprehensive pension scheme and medical, educational and other social benefits as well as financial help in relocating your family. The initial contract is for a period of three years with the possibility of a fixed-term extension or permanence. Serious consideration will be given to outstanding candidates willing to be seconded to ESO on extended leaves from their home institutions. The title or the grade may be subject to change according to qualification and the number of years of experience.

**Applications :** If you are interested in working in a stimulating international research environment and in areas of frontline science and technology, please send us your CV (in English) and the ESO Application Form **by 30 June 2004**.

All applications should include the names of four individuals willing to give professional references.

For further information, please contact Mr. Roland Block, Head of Personnel Department, Tel +49 89 320 06 589, e-mail: rblock@eso.org. You are also strongly encouraged to consult the ESO Home Page (<http://www.eso.org>)

Applications are invited for an Operations Staff Astronomer-Deputy Head of the Science Operations Department at the Very Large Telescope on Cerro Paranal near Antofagasta, Chile. This post is open to suitably qualified men and women:

## OPERATIONS STAFF ASTRONOMER

### DEPUTY HEAD OF THE PARANAL SCIENCE OPERATIONS DEPARTMENT

CAREER PATH: V

**Assignment:** The Science Operations Department at ESO's Paranal Observatory (PSO) is responsible for all aspects of the direct support of observing operations of the VLT, the VLTI, and in the future, of the VST and VISTA, so as to optimize the scientific output of this world leading astronomical facility. The department currently comprises 26 operations staff astronomers, 14 telescope instrument operators, and 5 data handling administrators, as well as, for the functional part of their assignment, 15 postdoctoral fellows of ESO's Office for Science. Further recruitment is planned once all auxiliary telescopes of the VLTI, VST and VISTA become operational.

The successful candidate will provide direct support to observing operations in both visitor and service mode: short-term (flexible) scheduling of queue observations, calibration and monitoring of the instruments, and assessment of the scientific quality of the astronomical data. As deputy he/she will assist the Head of PSO in the execution of his tasks in particular in the definition and implementation of the operations procedures and policies, organization of the support work, staff management and performance evaluation, interface with other groups across ESO involved in VLT operations support, and reporting activities.

As a members of the ESO Science Faculty, with an appointment at the level of Assistant or Associate Astronomer, he/she will be expected and encouraged to actively conduct astronomical research up to 50% of the time. 105 nights per year are spent at the observatory carrying out functional duties, usually in a shift of 8 days on Paranal, 6 days off. The rest of the time is spent in the Santiago office. Financial support for scientific trips and stays at other institutions, including in Europe, is foreseen.

**Education:** Ph.D. in Astronomy, Physics or equivalent; at least 5 years of postdoctoral experience.

**Experience and knowledge:** The ideal candidate has substantial observing experience (at least 8 years), excellent observation oriented research records, is familiar with a broad range of instrumental, data analysis, archiving and observational techniques, and is conversant with at least one major data reduction package such as MIDAS, iraf or IDL. Of special value would be experience in telescope and instrument operations and a record of instrumental experience, such as the participation in the design, construction or calibration of existing instruments. Experience in the management of projects and leadership as well as excellent command of the English language, a working knowledge of Spanish or a willingness to learn, and a strong sense of team spirit are essential.

**Duty station:** Paranal and Santiago, Chile

**Starting date:** As soon as possible

**Contract:** The initial contract is for a period of three years with the possibility of a fixed-term extension or permanence. Promotions will be based on scientific as well as functional achievements.

**Remuneration:** We offer an attractive remuneration package including a competitive salary (tax-free), comprehensive social benefits, and provide financial support in relocating families. Furthermore, an expatriation allowance as well as some other allowances may be added. Either the title or the grade may be subject to change according to education and the number of years of experience.

**Applications** consisting of your CV (in English language) and the ESO Application Form (to be obtained from the ESO Home Page at <http://www.eso.org>) and four letters of reference.

**should be submitted by 7 May 2004.**

For further information, please consult the ESO Home Page or contact Mrs. Nathalie Kastelyn.

Applications are invited for a Staff Astronomer position at APEX (the Atacama Pathfinder EXperiment) located on Chajnantor near San Pedro de Atacama, Chile.

## STAFF ASTRONOMER

CAREER PATH: V

**Assignment:** APEX is a sub-mm telescope presently being erected at the ALMA site of Chajnantor in Chile through a collaboration between the MPIfR, ESO and Sweden. The site is excellent for sub-mm observations, and the telescope will be equipped with bolometer arrays and heterodyne receivers for observations at sub-mm wavelengths as well as in the THz band. We seek one staff astronomer for APEX. He/she will join a team of scientists, engineers, and technicians, in total 20 people, responsible for the operation and maintenance of the antenna and its instrumentation. Astronomers will be part of the science operations group responsible to support observations, both in visitor mode and service mode, to develop calibration and quality control procedures for the instruments, to control the configuration of the system, and to develop operational procedures for the telescope including pointing models. The Science Operations team will consist of staff astronomers, fellows and telescope operators.

As an astronomer and member of the ESO Science Faculty, the successful candidate will be expected and encouraged to actively conduct astronomical research up to 50% of the time using APEX and other facilities. The APEX astronomers spend 105 nights per year carrying out functional duties in the APEX base in Sequitor and at the telescope, which is located on Chajnantor at an altitude of 5000 m, usually in a shift of 8 days in Sequitor with trips to Chajnantor, followed by 6 days off. The rest of their time is spent in the Santiago office. Scientific trips and stays at other institutions, also in Europe are foreseen.

**Education:** Ph.D. in Astronomy, Physics or equivalent

**Experience and knowledge:** APEX is seeking active a staff astronomer with a solid publication record in observational astronomy. Observational experience with (sub)mm telescopes will be an asset. At least three years of post-doctoral experience as well as excellent communication skills and a good command of the English language (spoken and written) will be required.

**Duty station:** Sequitor, Chajnantor and Santiago, Chile

**Starting date:** As soon as possible

**Contract:** The initial contract is for a period of three years with the possibility of a fixed-term extension. Promotions will be based on scientific as well as functional achievements. It is necessary to take a high altitude medical examination before taking up the post.

**Remuneration:** We offer an attractive remuneration package including a competitive salary (tax-free) and comprehensive social benefits. Furthermore, an expatriation allowance as well as some other allowances may be added. Either the title or the grade may be subject to change according to education and the number of years of experience.

**Applications** consisting of your CV (in English language) and the ESO Application Form (to be obtained from the ESO Home Page at <http://www.eso.org/>) and four letters of reference

**should be submitted by 7 May 2004.**

For further information, please consult the ESO Home Page or contact Mrs. Nathalie Kastelyn.

Applications are invited for a Staff Astronomer position in the Science Operations Department at the VLT Observatory on Cerro Paranal near Antofagasta, Chile.

## OPERATIONS STAFF ASTRONOMER (VLT)

CAREER PATH: V

**Assignment:** The first components of the VLT Interferometric Array (VLTi), including the science instruments MIDI and AMBER, are currently being commissioned. Scientific operations of the VLTi are expected to start in the first half of 2004. The successful candidate will support observing operations in both visitor and service mode at the VLTi. The tasks to be performed include the short-term (flexible) scheduling of queue observations, the calibration and monitoring of the instruments, and the assessment of the scientific quality of the astronomical data. The VLTi astronomer will contribute to the challenge of operating a world leading astronomical facility so as to optimize its scientific output, will acquire expert knowledge of novel instrumentation and techniques, and may be given the overall responsibility for an instrument.

Operations astronomers may be members of the ESO Science Faculty, with an appointment at the level of Assistant or Associate Astronomer. They will be expected and encouraged to actively conduct astronomical research up to 50% of the time. 105 nights per year are spent at the observatory carrying out functional duties, usually in a shift of 8 days on Paranal, 6 days off. The rest of the time is spent at the Santiago office. Depending on qualification, expertise, and personal interest, Operations Astronomers may alternatively be offered an appointment with up to 20% of the time for personal research and 150 days per year to be spent on the observatory. Financial support for scientific trips and stays at other institutions, including in Europe, is foreseen for all VLT Operations Astronomers.

**Education:** PhD in Astronomy, Physics or equivalent.

**Experience and knowledge:** The successful candidate combines substantial observing experience (at least 3 years) with active research and has observation oriented research records. Familiarity with a broad range of instrumental, data analysis, archiving, and observational techniques is required. He/She must be conversant with at least one major data reduction package such as MIDAS, iraf or IDL. Of special value would be a record of instrumental experience, such as the participation in the design, construction or calibration of existing instruments, as well as experience in telescope and instrument operations. Experience in any area of observational interferometry would also be an asset. Excellent communication skills, a good command of the English language, a working knowledge of Spanish or a willingness to learn and a strong sense of team spirit are essential.

**Duty station:** Paranal and Santiago, Chile.

**Starting date:** As soon as possible.

**Contract:** The initial contract is for a period of three years with the possibility of a fixed-term extension or permanence. Promotions will be based on scientific as well as functional achievements.

**Remuneration:** We offer an attractive remuneration package including a competitive salary (tax-free), comprehensive social benefits, and provide financial support in relocating families. Furthermore, an expatriation allowance as well as some other allowances may be added. Either the title or the grade may be subject to change according to education and the number of years of experience.

**Applications** consisting of your CV (in English language) and the ESO Application Form (to be obtained from the ESO Home Page at <http://www.eso.org/>) and four letters of reference

**should be submitted by 7 May 2004.**

For further information, please consult the ESO Home Page or contact Mrs. Nathalie Kastelyn.

Although preference will be given to nationals of the Member States of ESO: Belgium, Denmark, France, Germany, Italy, The Netherlands, Portugal, Sweden, Switzerland, and United Kingdom, no nationality is a priori excluded. The post is equally open to suitably qualified male and female applicants.

## SUBJECT INDEX

### ORGANIZATIONAL MATTER

ESO and NSF Sign Agreement on ALMA. Green Light for World's More Powerful Radio Observatory **111**, 39

### TELESCOPES AND INSTRUMENTATION

New Vistas Open with MIDI at the VLT Interferometer **111**, 40

V. Doublier: TIMM12 at the 3.6-m, or the Return of MIR **111**, 41

C. Cesarsky: Progress with the Atacama Large Millimeter Array **112**, 2

F. Primas: The Science Verification of FLAMES **112**, 3

R. Arsenault, J. Alonso, H. Bonnet, J. Brynnel, B. Delabre, R. Donaldson, C. Dupuy, E. Fedrigo, J. Spyromilio, T. Erm, J. Farinato, N. Hubin, L. Ivanescu, M. Kasper, S. Oberti, J. Paufique, S. Rossi, S. Tordo, S. Stroebele, J.-L. Lizon, P. Gigan, F. Pouplard, F. Delplancke, A. Silber, M. Quattri, R. Reiss: MACAO-VLTI First Light: Adaptive Optics at the Service of Interferometry **112**, 7

Ch. Leinert, U. Graser, A. Richichi, M. Schöller, L.F.B.M. Waters, G. Perrin, W. Jaffe, B. Lopez, A. Glazenberg-Kluttig, F. Przygodda, S. Morel, P. Biereichel, N. Haddad, N. Housen, A. Wallander: MIDI Combines Light from the VLTI: the Start of 10 $\mu$ m Interferometry at ESO **112**, 13

L. Germany: News from La Silla **112**, 18

R. Wilson: The History and Development of the ESO Active Optics System **113**, 2

G. Monnet, R. Bacon: VLT/I Instrumentation: Lessons Learned Forum **113**, 10

L. Germany: News from La Silla **113**, 14

A. Kaufer, L. Pasquini, R. Castillo, R. Schmutzer, J. Smoker: First Images with the ARGUS Mode of FLAMES **113**, 15

F. Eisenhauer, M. Tecza, N. Thatte, R. Genzel, R. Abuter, C. Iserlohe, J. Schreiber, S. Huber, C. Röhrle, M. Horrobin, A. Schegerer, A.J. Baker, R. Bender, R. Davies, M. Lehnert, D. Lutz, N. Nesvadba, T. Ott, S. Seitz, R. Schödel, L.J. Tacconi, H. Bonnet, R. Castillo, R. Conzelmann, R. Donaldson, G. Finger, G. Gillet, N. Hubin, M. Kissler-Patig, J.-L. Lizon, G. Monnet, S. Ströbele: The Universe in 3D: First Observations with SPIFI, the Infrared

Integral Field Spectrometer for the VLT **113**, 17

S. D'Odorico, A.-M. Aguayo, S. Brilliant, T. Canavan, R. Castillo, J.-G. Cuby, H. Dekker, N. Haddad, C. Izzo, R. Hanuschik, M. Kissler-Patig, J.-L. Lizon, M. Marchesi, G. Marconi, P. Moller, R. Palsa, P. Robert, M. Romaniello, P. Sartoretti: VIMOS in Operation at the VLT **113**, 26

ESO PR Photo 27/03: VLT Observes Comet Halley at Record Distance **113**, 31

F. Comerón, M. Romaniello, J. Breysacher, D. Silva, G. Mathys: Four Years of Service Mode Observing at the VLT: Performance and User Feedback **113**, 32

S. Stanghellini: The Alcatel/EIE ALMA Antenna Prototype Approaches Completion in New Mexico **113**, 37

G. Chincarini, F. Zerbi, A. Antonelli, P. Conconi, G. Cutispoto, S. Covino, F. D'Alessio, A. De Ugarte Postigo, E. Molinari, L. Nicastro, G. Tosti, F. Vitali, M. Stefanon, B. Jordan, L. Burderi, S. Campana, J. Danziger, A. Di Paola, A. Fernandez-Soto, F. Fiore, G. Ghisellini, P. Goldoni, G.L. Israel, D. Lorenzetti, B. Mc Breen, N. Masetti, S. Monfardini, A. Palazzi, J. Paul, E. Pian, M. Rodono, L. Stella, G. Tagliaferri, V. Testa, S.D. Vergani: The Last Born at La Silla: REM, the Rapid Eye Mount **113**, 40

M. Boer, A. Klotz, J.-L. Atteia, G. Buchholtz, F. Daigne, J. Eysseric, P. Goldoni, P. Jean, A. Lecavalier des Etangs, M. Lopez, R. Malina, A. Marcowith, J.B. Marquette, A. Mayet, F. Mirabel, R. Mochkovitch, J. Pacheco, L. Pares, J. Paul, H. Pedersen, H. Pinna, J.-P. Sivan: The Gamma-Ray Burst Hunt at La Silla: the TAROT-S Very Fast Moving Telescope **113**, 45

ALMA Groundbreaking Ceremony **114**, 2

A. Moorwood: CRIRES Takes Shape **114**, 5

R.N. Wilson: Addendum to "The History and Development of the ESO Active Optics System" **114**, 9

S. Bagnulo, E. Jehin, C. Ledoux, R. Cabanac, C. Melo, R. Gilmozzi: The UVES Paranal Observatory Project **114**, 10

D. Bonaccini, W. Hackenberg, L. Taylor: Pushing Technologies: ESO Fibre Laser Development for Laser Guide-Star Adaptive Optics **114**, 15

M. Mayor, F. Pepe, D. Queloz, F. Bouchy, G. Rupprecht, G. Lo Curto, G. Avila, W. Benz, J.-L. Bertaux, X. Bonfils, Th.

Dall, H. Dekker, B. Delabre, W. Eckert, M. Fleury, A. Gilliotte, D. Gojak, J.C. Guzman, D. Kohler, J.-L. Lizon, A. Longinotti, C. Lovis, D. Mégevand, L. Pasquini, J. Reyes, J.-P. Sivan, D. Sosnowska, R. Soto, S. Udry, A. Van Kesteren, L. Weber, U. Weilenmann: Setting New Standards with HARPS **114**, 20

L. Germany: News from La Silla **114**, 25

### REPORTS FROM OBSERVERS

T. Ott, R. Schödel, R. Genzl, A. Eckart, F. Lacombe, D. Rouan, R. Hofmann, M. Lehnert, T. Alexander, A. Sternberg, M. Reid, W. Brabndner, R. Lenzen, M. Hartung, E. Gendron, Y. Clénet, P. Léna, G. Rousset, A.-M. Lagrange, N. Ageorges, N. Hubin, C. Lidman, A.F.M. Moorwood, A. Renzini, J. Spyromilio, L.E. Tacconi-Garman, K.M. Menten, N. Mouawad: Inward Bound: Studying the Galactic Centre with NAOS/CONICA **111**, 1

A. Stolte, W. Brandner, E.K. Grebel, Don F. Figer, F. Eisenhauer, R. Lenzen, Y. Harayama: NAOS/CONICA Performance in a Crowded Field- the Arches Cluster **111**, 9

M. Pettini: Early Galactic Chemical Evolution with UVES **111**, 13

O. Le Fèvre, G. Vettolani, D. Maccagni, J.-P. Picat, B. Garilli, L. Tresse, C. Adami, M. Arnaboldi, S. Arnouts, S. Bardelli, M. Bolzonella, D. Bottini, G. Buzzarello, S. Charlot, G. Chincarini, T. Contini, S. Foucaud, D. Franzetti, L. Guzzo, S. Gwyn, O. Ilbert, A. Iovino, V. Le Brun, M. Longhetti, C. Marioni, G. Mathez, A. Mazure, H. McCracken, Y. Mellier, B. Meneux, P. Merluzzi, S. Paltani, R. Pello, M. Radovich, P. Rippepi, D. Rizzo, R. Scaramella, M. Scodreggio, G. Zamorani, A. Zanichelli, E. Zucca: The VIRMOS-VLT Deep Survey: a Progress Report **111**, 18

H. Boehnhardt, A. Barucci, A. Delsanti, C. De Bergh, A. Doressoundiram, J. Romon, E. Dotto, G. Tozzi, M. Lazzarin, S. Fournisier, N. Peixinho, O. Hainaut, J. Davies, P. Rousset, L. Barrera, K. Birkle, K. Meech, J. Ortiz, T. Sekiguchi, J.-I. Watanabe, N. Thomas, R. West: Exploring the Icy World of the Edgeworth-Kuiper Belt- An ESO Large

- Programme **111**, 22
- A. Cimatti, E. Daddi, M. Mignoli, L. Pozzetti, A. Fontana, T. Broadhurst, F. Poli, P. Saracco, A. Renzini, G. Zamorani, N. Menci, S. Cristiani, S. D'Odorico, E. Giallongo, R. Gilmozzi, S. Di Serego Alighieri, J. Vernet: The K20 Survey: New Light on Galaxy Formation and Evolution **111**, 29
- B. Venemans, G. Miley, J. Kurk, H. Röttgering, L. Pentericci: Tracing the Formation and Evolution of Clusters and their Central Massive Galaxies to  $z > 4$ : a Progress Report **111**, 36
- G. Rudnick, S. White, A. Aragon-Salamanca, R. Bender, P. Best, M. Bremer, S. Charlot, D. Clowe, J. Dalcanton, M. Dantel, G. De Lucia, V. Desai, B. Fort, C. Halliday, P. Jablonka, G. Kaufmann, Y. Mellier, B. Milvang-Jensen, R. Pello, B. Poggianti, S. Poirier, H. Rottgering, R. Saglia, P. Schneider, L. Simard, D. Zaritsky: Studying High Redshift Galaxy Clusters with the ESO Distant Cluster Survey **112**, 19
- N. Napiwotzki, N. Christlieb, H. Drechsel, H.-J. Hagen, U. Heber, D. Homeier, C. Karl, D. Koesre, B. Leibundgut, T.R. Marsh, S. Moehler, G. Nelemans, E.-M. Pauli, D. Reimers, A. Renzini, L. Yungelson: SPY-The ESO Supernovae Type Ia Progenitor Survey **112**, 25
- R.G. Gratton, P. Bonifacio, A. Bragaglia, E. Carretta, V. Castellani, M. Centurion, A. Chieffi, R. Claudi, G. Clementini, F. D'Antona, S. Desidera, P. Francois, F. Grundahl, S. Lucatello, P. Molaro, L. Pasquini, C. Sneden, F. Spite, O. Straniero, M. Zoccali: Abundances in Globular Cluster Dwarfs **112**, 31
- M. Arnaboldi, C. Gerhard, K.C. Freeman: Intracluster Planetary Nebulae in the Virgo Cluster: Tracers of Diffuse Light **112**, 37
- F. Barrientos, M. Gladders, H. Yee, E. Ellingson, P. Hall, L. Infante: The Red-Sequence Cluster Survey **112**, 40
- M. Rejkuba, D. Minniti, D.R. Silva, T.R. Bedding: Long Period Variables in the Giant Elliptical Galaxy NGC 5128: the Mira P-L Relation at 4 Mpc **112**, 43
- H. Dejonghe, S. De Rijcke, W.W. Zeilinger, G.K.T. Hau: The Dynamics of Dwarf Elliptical Galaxy **112**, 47
- E. van Dishoeck, E. Dartois, K.M. Pontoppidan, W.F. Thi, L. D'Hendecourt, A.C.A. Boogert, H.J. Fraser, W.A. Schutte, A.G.G.M. Tielens: Origin and Evolution of Ices in Star-Forming Regions: A VLT-Isaac 3-5  $\mu\text{m}$  Spectroscopic Survey **113**, 49
- A. Franceschini, S. Berta, G. Rodighiero, D. Elbaz, D. Rigopoulou, H. Aussel, C.J. Cesarsky, D. Fadda, H. Flores, M. Rowan-Robinson, M. Vaccari: Deep Infrared Surveys and their Cosmological Implications **113**, 56
- S. Ellison, M. Pettini, C.W. Churchill, I.M. Hook, S.A. Rix, P. Shaver, J. V. Wall, L. Yan: The CORALS Survey: a Review and Progress Report on the Search for Dust Obscured Quasar Absorption Line Systems **113**, 64
- R. Morganti, T. Oosterloo, J. Holt, C. Tadhunter, J.M. van der Hulst: IC 5063: AGN Driven Outflow of Warm and Cold Gas **113**, 67
- A. Richichi, F. Paresce: Harvesting Scientific Results with the VLTI **114**, 26
- J. Alves, N. Homeier: Our Own Starburst **114**, 35
- R. Tüllmann, M.R. Rosa, T. Elwert, D.J. Bomans, A.M.N. Ferguson, R.-J. Dettmar: Extraplanar Star Formation in NGC 55 **114**, 39
- ESO Press Release: Flares from the Direction of the Black Hole in the Galactic Centre **114**, 43
- ESO PR Photo 31/03: Roses in the Southern Sky **114**, 44
- B. Leibundgut, U. Grothkopf, A. Treumann: Metrics to Measure ESO's Scientific Success **114**, 46
- D. Alloin, M. Pierre, A. Refregier: International Workshop on "Structure Evolution and Cosmology: New Synergy Between Ground-Based Observations, Space Observation and Theory" **111**, 42
- D. Alloin, W. Gieren: International Workshop on "Stellar Candles for the Extragalactic Distance Scale" **111**, 43
- B. Leibundgut: Fellows at ESO: Aureore Bacman, Maria-Rosa Cioni, Ivo Saviane and Petri Vaisanen **111**, 44
- Uranus, Rings and Moons **111**, 45
- U. Grothkopf: From Books to Bytes: Changes in the ESO Libraries over the Past Decade **112**, 51
- O. Hainaut: International Workshop on "First Decadal Review of the Edgeworth-Kuiper Belt: Towards New Frontiers" **112**, 53
- Fellows at ESO: Stefano Etori, Lisa Germany, Linda Schmidtbreick and Manuela Zoccali **112**, 55
- R. West: High Honour to Ray Wilson **112**, 56
- H. Boffin, R. West: The May 7 Mercury Transit **112**, 57
- C. Masden: ESO at the IAU General Assembly **113**, 71
- ESO Director General Appointed President-Elect of IAU **113**, 71
- ESO Press Release: Philippe Busquin Visits Paranal **113**, 72
- Fellows at ESO: Malvina Billeres, Valentin Ivanov, Claudio Melo, Chris Mullis **113**, 73
- G. Hau, D. Alloin: Report on the Topical Meeting « Resolved Stellar Populations » **114**, 50
- P. Shaver: ESO-ESA Meeting "Cosmology and Fundamental Physics" **114**, 50
- W. Brandner, M. Kasper: ESO Workshop on "Science with Adaptive Optics" **114**, 51
- H.U. Käufel, A. Moorwood: ESO Workshop on "High Resolution Infrared Spectroscopy in Astronomy" **114**, 52
- A. Renzini: ESO-USM-MPE Workshop on "Multiwavelength Mapping of Galaxy Formation and Evolution" **114**, 53
- The VT-2004 Educational Programme – A Unique Opportunity **114**, 55
- B. Mackowiak, R. West: Physics on Stage 3: Life and New Frontiers **114**, 56
- Fellows at ESO **114**, 57

## ANNOUNCEMENTS

- ESO Workshop on Large Programmes and Public Surveys **111**, 46
- ESO Workshop on High-Resolution Infrared Spectroscopy in Astronomy **111**, 46
- First Announcement of an ESO Workshop on Science with Adaptive Optics **111**, 47
- Personnel Movements **111**, 47
- Acronyms Used at ESO **111**, 48
- ESP Studentship Programme **111**, 48
- ESO Fellowship Programme 2003/2004 **112**, 57
- Call for Proposals for a Third Generation Instrument for the NTT **112**, 58
- R. West: Kurt Kjær retires from ESO **112**, 58
- ESO Vacancy: Head of Instrumentation Division **112**, 59
- Personnel Movements **112**, 59
- ESO Workshop on Large Programmes and Surveys **112**, 60
- Future ESO meeting: Extrasolar Planets and Brown Dwarfs **113**, 74
- Future ESO school: Physics of Active Galactic Nuclei at All Scales **113**, 74
- Personnel Movements **113**, 74
- ESO Vacancy (Staff Astronomer) and ESO Fellowship 2003/2004 **113**, 75
- Venus Rendezvous with the Sun **113**, 76
- Future ESO Workshop on Planetary Nebulae beyond the Milky Way **114**, 58
- ESO Vacancy: Infrared Astronomer, Head of the IR Instrumentation Dept; **114**, 59
- Personnel Movement **114**, 59

# AUTHOR INDEX

## A

- D. Alloin, M. Pierre, A. Refregier: International Workshop on “Structure Evolution and Cosmology: New Synergy Between Ground-Base Observations, Space Observation and Theory” **111**, 42
- D. Alloin, W. Gieren: International Workshop on “Stellar Candles for the Extragalactic Distance Scale” **111**, 43
- J. Alves, N. Homeier: Our Own Starburst **114**, 35
- M. Arnaboldi, C. Gerhard, K.C. Freeman: Intracluster Planetary Nebulae in the Virgo Cluster: Tracers of Diffuse Light **112**, 37
- R. Arsenault, J. Alonso, H. Bonnet, J. Brynnel, B. Delabre, R. Donaldson, C. Dupuy, E. Fedrigo, J. Spyromilio, T. Erm, J. Farinato, N. Hubin, L. Ivanescu, M. Kasper, S. Oberti, J. Paufigue, S. Rossi, S. Tordo, S. Stroebale, J.-L. Lizon, P. Gigan, F. Pouplard, F. Delplancke, A. Silber, M. Quattri, R. Reiss: MACAO-VLTI First Light: Adaptive Optics at the Service of Interferometry **112**, 7

## B

- S. Bagnulo, E. Jehin, C. Ledoux, R. Cabanac, C. Melo, R. Gilmozzi: The UVES Paranal Observatory Project **114**, 10
- F. Barrientos, M. Gladders, H. Yee, E. Ellingson, P. Hall, L. Infante : The Red-Sequence Cluster Survey **112**, 40
- H. Boehnhardt, A. Barucci, A. Delsanti, C. De Bergh, A. Doressoundiram, J. Romon, E. Dotto, G. Tozzi, M. Lazzarin, S. Fournisier, N. Peixinho, O. Hainaut, J. Davies, P. Rousselot, L. Barrera, K. Birkle, K. Meech, J. Ortiz, T. Sekiguchi, J.-I. Watanabe, N. Thomas, R. West: Exploring the Icy World of the Edgeworth–Kuiper Belt- An ESO Large Programme **111**, 22
- M. Boer, A. Klotz, J.-L. Atteia, G. Buchholtz, F. Daigne, J. Eysseric, P. Goldoni, P. Jean, A. Lecavalier des Etangs, M. Lopez, R. Malina, A. Marcowith, J.B. Marquette, A. Mayet, F. Mirabel, R. Mochkovitch, J. Pacheco, L. Pares, J. Paul, H. Pedersen, H. Pinna, J.-P. Sivan : The Gamma-Ray Burst Hunt at La Silla: the TAROT-S Very Fast Moving Telescope **113**, 45
- H. Boffin, R. West: The May 7 Mercury Transit **112**, 57
- D. Bonaccini, W. Hackenberg, L. Taylor:

- Pushing Technologies: ESO Fibre Laser Development for Laser Guide-Star Adaptive Optics **114**, 15
- W. Brandner, M. Kasper: ESO Workshop on “Science with Adaptive Optics” **114**, 51

## C

- C. Cesarsky: Progress with the Atacama Large Millimeter Array **112**, 2
- G. Chincarini, F. Zerbi, A. Antonelli, P. Conconi, G. Cutispoto, S. Covino, F. D’Alessio, A. De Ugarte Postigo, E. Molinari, L. Nicastro, G. Tosti, F. Vitali, M. Stefanon, B. Jordan, L. Burderi, S. Campana, J. Danziger, A. Di Paola, A. Fernandez-Soto, F. Fiore, G. Ghisellini, P. Goldoni, G.L. Israel, D. Lorenzetti, B. Mc Breen, N. Masetti, S. Monfardini, A. Palazzi, J. Paul, E. Pian, M. Rodono, L. Stella, G. Tagliaferri, V. Testa, S.D. Vergani: The Last Born at La Silla : REM, the Rapid Eye Mount **113**, 40
- A. Cimatti, E. Daddi, M. Mignoli, L. Pozzetti, A. Fontana, T. Broadhurst, F. Poli, P. Saracco, A. Renzini, G. Zamorani, N. Menci, S. Cristiani, S. D’Odorico, E. Giallongo, R. Gilmozzi, S. Di Serego Alighieri, J. Vernet: The K20 Survey: New Light on Galaxy Formation and Evolution **111**, 29
- F. Comerón, M. Romaniello, J. Breysacher, D. Silva, G. Mathys : Four Years of Service Mode Observing at the VLT: Performance and User Feedback **113**, 32

## D

- H. Dejonghe, S. De Rijcke, W.W. Zeilinger, G.K.T. Hau : The Dynamics of Dwarf Elliptical Galaxy **112**, 47
- S. D’Odorico, A.-M. Aguayo, S. Brilliant, T. Canavan, R. Castillo, J.-G. Cuby, H. Dekker, N. Haddad, C. Izzo, R. Hanuschik, M. Kissler-Patig, J.-L. Lizon, M. Marchesi, G. Marconi, P. Moller, R. Palsa, P. Robert, M. Romaniello, P. Sartoretti : VIMOS in Operation at the VLT **113**, 26
- V. Doublier: TIMMI2 at the 3.6-m, or the Return of MIR **111**, 41

## E

- F. Eisenhauer, M. Tecza, N. Thatte, R. Genzel, R. Abuter, C. Iserlohe, J. Schreiber, S. Huber, C. Röhrle, M. Horrobin, A. Schegerer, A.J. Baker, R. Bender, R. Davies, M. Lehnert, D. Lutz,

- N. Nesvadba, T. Ott, S. Seitz, R. Schödel, L.J. Tacconi, H. Bonnet, R. Castillo, R. Conzelmann, R. Donaldson, G. Finger, G. Gillet, N. Hubin, M. Kissler-Patig, J.-L. Lizon, G. Monnet, S. Ströbele: The Universe in 3D: First Observations with SPIFI, the Infrared Integral Field Spectrometer for the VLT **113**, 17

- S. Ellison, M. Pettini, C.W. Churchill, I.M. Hook, S.A. Rix, P. Shaver, J. V. Wall, L. Yan: The CORALS Survey: a Review and Progress Report on the Search for Dust Obscured Quasar Absorption Line Systems **113**, 64

## F

- A. Franceschini, S. Berta, G. Rodighiero, D. Elbaz, D. Rigopoulou, H. Aussel, C.J. Cesarsky, D. Fadda, H. Flores, M. Rowan-Robinson, M. Vaccari: Deep Infrared Surveys and their Cosmological Implications **113**, 56

## G

- L. Germany: News from La Silla **112**, 18
- L. Germany: News from La Silla **113**, 14
- L. Germany: News from La Silla **114**, 25
- R.G. Gratton, P. Bonifacio, A. Bragaglia, E. Carretta, V. Castellani, M. Centurion, A. Chieffi, R. Claudi, G. Clementini, F. D’Antona, S. Desidera, P. Francois, F. Grundahl, S. Lucatello, P. Molaro, L. Pasquini, C. Sneden, F. Spite, O. Straniero, M. Zoccali: Abundances in Globular Cluster Dwarfs **112**, 31
- U. Grothkopf: From Books to Bytes: Changes in the ESO Libraries over the Past Decade **112**, 51

## H

- O. Hainaut: International Workshop on “First Decadal Review of the Edgeworth-Kuiper Belt: Towards New Frontiers” **112**, 53
- G. Hau, D. Alloin: Report on the Topical Meeting « Resolved Stellar Populations » **114**, 50

## K

- A. Kaufer, L. Pasquini, R. Castillo, R. Schmutzer, J. Smoker: First Images with the ARGUS Mode of FLAMES **113**, 15
- H.U. Käufel, A. Moorwood: ESO Workshop on “High Resolution Infrared Spectroscopy in Astronomy” **114**, 52

## L

- O. Le Fèvre, G. Vettolani, D. Maccagni, J.-P. Picat, B. Garilli, L. Tresse, C. Adami, M. Arnaboldi, S. Arnouts, S. Bardelli, M. Bolzonella, D. Bottini, G. Buzzarello, S. Charlot, G. Chincarini, T. Contini, S. Foucaud, D. Franzetti, L. Guzzo, S. Gwyn, O. Ilbert, A. Iovino, V. Le Brun, M. Longhetti, C. Marioni, G. Mathez, A. Mazure, H. McCracken, Y. Mellier, B. Meneux, P. Merluzzi, S. Paltani, R. Pello, M. Radovich, P. Rippepi, D. Rizzo, R. Scaramella, M. Scodeggio, G. Zamorani, A. Zanichelli, E. Zucca: The VIRMOS-VLT Deep Survey: a Progress Report **111**, 18
- B. Leibundgut: Fellows at ESO: Aurore Bacman, Maria-Rosa Cioni, Ivo Saviane and Petri Vaisanen **111**, 44
- B. Leibundgut, U. Grothkopf, A. Treumann: Metrics to Measure ESO's Scientific Success **114**, 46
- Ch. Leinert, U. Graser, A. Richichi, M. Schöller, L. F. B. M. Waters, G. Perrin, W. Jaffe, B. Lopez, A. Glazenberg-Kluttig, F. Przygodda, S. Morel, P. Biereichel, N. Haddad, N. Housen, A. Wallander: MIDI Combines Light from the VLTI: the Start of 10 $\mu$ m Interferometry at ESO **112**, 13

## M

- B. Mackowiak, R. West: Physics on Stage 3: Life and New Frontiers **114**, 56
- C. Masden: ESO at the IAU General Assembly **113**, 71
- M. Mayor, F. Pepe, D. Queloz, F. Bouchy, G. Rupprecht, G. Lo Curto, G. Avila, W. Benz, J.-L. Bertaux, X. Bonfils, Th. Dall, H. Dekker, B. Delabre, W. Eckert, M. Fleury, A. Gilliotte, D. Gojak, J.C. Guzman, D. Kohler, J.-L. Lizon, A. Longinotti, C. Lovis, D. Mégevand, L. Pasquini, J. Reyes, J.-P. Sivan, D. Sosnowska, R. Soto, S. Udry, A. Van Kesteren, L. Weber, U. Weilenmann: Setting New Standards with HARPS **114**, 20
- G. Monnet, R. Bacon: VLTI Instrumentation : Lessons Learned Forum **113**, 10
- A. Moorwood: CRIRES Takes Shape **114**, 5
- R. Morganti, T. Oosterloo, J. Holt, C.

Tadhunter, J.M. van der Hulst: IC 5063: AGN Driven Outflow of Warm and Cold Gas **113**, 67

## N

- N. Napiwotzki, N. Christlieb, H. Drechsel, H.-J. Hagen, U. Heber, D. Homeier, C. Karl, D. Koesre, B. Leibundgut, T.R. Marsh, S. Moehler, G. Nelemans, E.-M. Pauli, D. Reimers, A. Renzini, L. Yungelson: SPY-The ESO Supernovae Type Ia Progenitor Survey **112**, 25
- R.G. Gratton: Abundances in Globular Cluster Dwarfs **112**, 31

## O

- T. Ott, R. Schödel, R. Genzl, A. Eckart, F. Lacombe, D. Rouan, R. Hofmann, M. Lehnert, T. Alexander, A. Sternberg, M. Reid, W. Brandner, R. Lenzen, M. Hartung, E. Gendron, Y. Clénet, P. Léna, G. Rousset, A.-M. Lagrange, N. Ageorges, N. Hubin, C. Lidman, A.F.M. Moorwood, A. Renzini, J. Spyromilio, L.E. Tacconi-Garman, K.M. Menten, N. Mouawad: Inward Bound : Studying the Galactic Centre with NAOS/CONICA **111**, 1

## P

- M. Pettini: Early Galactic Chemical Evolution with UVES **111**, 13
- F. Primas: The Science Verification of FLAMES **112**, 3

## R

- M. Rejkuba, D. Minniti, D.R. Silva, T.R. Bedding: Long Period Variables in the Giant Elliptical Galaxy NGC 5128: the Mira P-L Relation at 4 Mpc **112**, 43
- A. Renzini: ESO-USM-MPE Workshop on "Multiwavelength Mapping of Galaxy Formation and Evolution" **114**, 53
- A. Richichi, F. Paresce: Harvesting Scientific Results with the VLTI **114**, 26
- G. Rudnick, S. White, A. Aragon-Salamanca, R. Bender, P. Best, M. Bremer, S. Charlot, D. Clowe, J. Dalcanton, M. Dantel, G. De Lucia, V.

Desai, B. Fort, C. Halliday, P. Jablonka, G. Kaufmann, Y. Mellier, B. Milvang-Jensen, R. Pello, B. Poggianti, S. Poirier, H. Rottgering, R. Saglia, P. Schneider, L. Simard, D. Zaritsky: Studying High Redshift Galaxy Clusters with the ESO Distant Cluster Survey **112**, 19

## S

- P. Shaver: ESO-ESA Meeting "Cosmology and Fundamental Physics" **114**, 50
- S. Stanghellini: The Alcatel/EIE ALMA Antenna Prototype Approaches Completion in New Mexico **113**, 37
- A. Stolte, W. Brandner, E.K. Grebel, Don F. Figer, F. Eisenhauer, R. Lenzen, Y. Harayama: NAOS/CONICA Performance in a Crowded Field- the Arches Cluster **111**, 9

## T

- R. Tüllmann, M.R. Rosa, T. Elwert, D.J. Bomans, A.M.N. Ferguson, R.-J. Dettmar: Extraplanar Star Formation in NGC 55 **114**, 39

## V

- E. van Dishoeck, E. Dartois, K.M. Pontoppidan, W.F. Thi, L. D'Hendecourt, A.C.A. Boogert, H.J. Fraser, W.A. Schutte, A.G.G.M. Tielens: Origin and Evolution of Ices in Star-Forming Regions: A VLT-Isaac 3-5  $\mu$ m Spectroscopic Survey **113**, 49
- B. Venemans, G. Miley, J. Kurk, H. Röttgering, L. Pentericci: Tracing the Formation and Evolution of Clusters and their Central Massive Galaxies to  $z > 4$ : a Progress Report **111**, 36

## W

- R. West: High Honour to Ray Wilson **112**, 56
- R. West: Kurt Kjär retires from ESO **112**, 58
- R. Wilson: The History and Development of the ESO Active Optics System **113**, 2
- R. Wilson: Addendum to "The History and Development of the ESO Active Optics System" **114**, 9

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 organising collaboration in astronomy..." It is supported by ten countries: Belgium, Denmark, France, Germany, Italy, the Netherlands, Portugal, Sweden, Switzerland and the United Kingdom. ESO operates at three sites in the Atacama desert region of Chile. The Very Large Telescope (VLT), is located on Paranal, a 2,600 m high mountain approximately 130 km south of Antofagasta. The VLT consists of four 8.2 metre diameter telescopes. These telescopes can be used separately, or in combination as a giant interferometer (VLTI). At La Silla, 600 km north of Santiago de Chile at 2,400 m altitude, ESO operates several optical telescopes with diameters up to 3.6 m. The third site is the 5,000 m high Llano de Chajnantor, near San Pedro de Atacama. Here a new submillimetre telescope (APEX) is being completed, and a large submillimetre-wave array of 64 antennas (ALMA) is under development. Over 1300 proposals are made each year for the use of the ESO telescopes. The ESO headquarters are located in Garching, near Munich, Germany. This is the scientific, technical and administrative centre of ESO where technical development programmes are carried out to provide the Paranal and La Silla observatories with the most advanced instruments. ESO employs about 320 international staff members, Fellows and Associates in Europe and Chile, and about 160 local staff members in Chile.

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## INTERESTED IN ALMA SCIENCE?

Over the last year, ALMA scientists have developed a Design Reference Science Plan (DRSP) with the goal to provide a prototype suite of ALMA projects that could be carried out in ~3 years of ALMA operations. This plan provides a quantitative reference for developing the ALMA science operations plan, for software design, and for other applications within the project. Check out your favorite observing program by clicking on "ALMA DRSP" through the ESO ALMA Web site, or go directly to: <http://www.strw.leidenuniv.nl/~alma/>

**Ewine van Dishoeck**  
(Chair, ALMA European Science  
Advisory Committee)

## ALMA COMMUNITY MEETING

The second 'ALMA Community Meeting' will be held on September 24, 2004 at ESO, Garching. Topics will include an update of the project, the European ALMA Regional Center, and the science that can be done in the early science phase and later with the full array. The local organization committee will consist of T.L. Wilson (chair), R. Laing, C. De Breuck and M. Zwaan. The scientific organizing committee is formed by the European ALMA Science Advisory Committee. Check the ESO-ALMA Web page this summer at <http://www.eso.org/projects/alma/> for registration, logistical information and updates on the programme.

## CONTENTS

### TELESCOPES AND INSTRUMENTATION

Five Years VLT

<b>CATHERINE CESARSKY</b> , ESO Director General .....	<b>2</b>
<b>RICCARDO GIACCONI</b> , ESO Director General, 1993-1999 .....	<b>3</b>
<b>ROBERTO GILMOZZI</b> , Paranal Director .....	<b>4</b>
<b>ALVIO RENZINI</b> , Excerpts From the First Five Years of VLT Science .....	<b>5</b>
<b>A. MOORWOOD &amp; S. D'ODORICO</b> - New VLT Instruments Underway .....	<b>8</b>
<b>R. ARSENAULT ET AL.</b> - Towards an Adaptive Secondary for the VLT ? .....	<b>11</b>
<b>B. KOEHLER</b> - The First Light of the First VLTI Auxiliary Telescope .....	<b>15</b>
<b>F. PATAT</b> - Night Sky Brightness During Sunspot Maximum at Paranal .....	<b>18</b>

### REPORTS FROM OBSERVERS

<b>M.R.L. CIONI ET AL.</b> - DENIS Results on the Magellanic Clouds .....	<b>22</b>
<b>M. LEHNERT &amp; M. BREMER</b> - High Redshift Galaxies and the Sources of Reionization .....	<b>27</b>
<b>E. TOLSTOY ET AL.</b> - Stellar Spectroscopy of Individual Stars in Local Group Galaxies with the VLT .....	<b>32</b>
<b>TH. ENCRENAZ ET AL.</b> - First detection of Carbon Monoxide in the Atmosphere of Uranus.....	<b>35</b>
<b>A. KOCH ET AL.</b> - Correcting Spatial Gradients .....	<b>37</b>

### OTHER ASTRONOMICAL NEWS

<b>H. VAN WINCKEL</b> - The Users' Committee.....	<b>40</b>
<b>S. WAGNER &amp; B. LEIBUNDGUT</b> - Large Programmes and Surveys .....	<b>41</b>
<b>I. CORBETT</b> - Future Large-Scale Projects and Programmes in Astronomy and Astrophysics .....	<b>43</b>
Finland to Join ESO.....	<b>44</b>
<b>D. ALLOIN &amp; D. MINNITI</b> - Report on the « Extrasolar Planets and brown dwarfs » School .....	<b>45</b>
<b>D. ALLOIN</b> - Report on the « Physics of Active Galactic Nuclei at All Scales » Workshop .....	<b>46</b>
<b>C. HUMMEL &amp; D. ALLOIN</b> - Report on « Optical Interferometry Brings New Frontiers in Astrophysics » Micro-Workshop .....	<b>47</b>
Fellows at ESO - N. Cretton, E. Daddi, P. Gandhi & D. Nürnberger.....	<b>47</b>
<b>R. WEST &amp; H.M.J. BOFFIN</b> - The Venus Transit 2004 Programme .....	<b>49</b>

### ANNOUNCEMENTS

<b>B. PIRENNE</b> - Upcoming Change in the Supported Archive Output Media .....	<b>52</b>
ESO-Arcetri Conference on « Chemical Abundances and Mixing in Stars in the Milky Way and its Satellites » .....	<b>52</b>
Personnel Movements.....	<b>53</b>
ESO Studentship Programme .....	<b>53</b>
Vacancies .....	<b>54</b>
<b>ANNUAL INDEX 2003</b> .....	<b>56</b>