

Publication Digest

In September 2013, the 10 000th paper was entered into the Telescope Bibliography (*telbib*), the database of refereed publications that uses ESO data (<http://telbib.eso.org>). This milestone was marked by an ESO announcement, highlighting the paper based on VIMOS data that crossed the 10k line (see Announcement ann13073: <http://www.eso.org/public/announcements/ann13073/>). Throughout the year, 840 papers by members of the ESO user community were added to *telbib*. The number of papers based on data from the various observing sites as well as the total number per year can be found in the table. An overview of publication statistics is also available from a dedicated webpage that links to the corresponding records in the *telbib* database (http://www.eso.org/sci/libraries/telbib_pubstats_overview.html).

Scientific results using data from the Very Large Telescope (VLT/VLTI) led to more than 560 papers this year. With 117 refereed publications, UVES continues to be one of the most productive VLT instruments. The X-shooter spectrograph shows a steep increase in the number of publications and has produced a total of 168 papers from 2010 to 2013. For more detailed statistics of individual instruments, please consult the report, *Basic ESO Publication Statistics* (<http://www.eso.org/sci/libraries/edocs/ESO/ESOstats.pdf>).

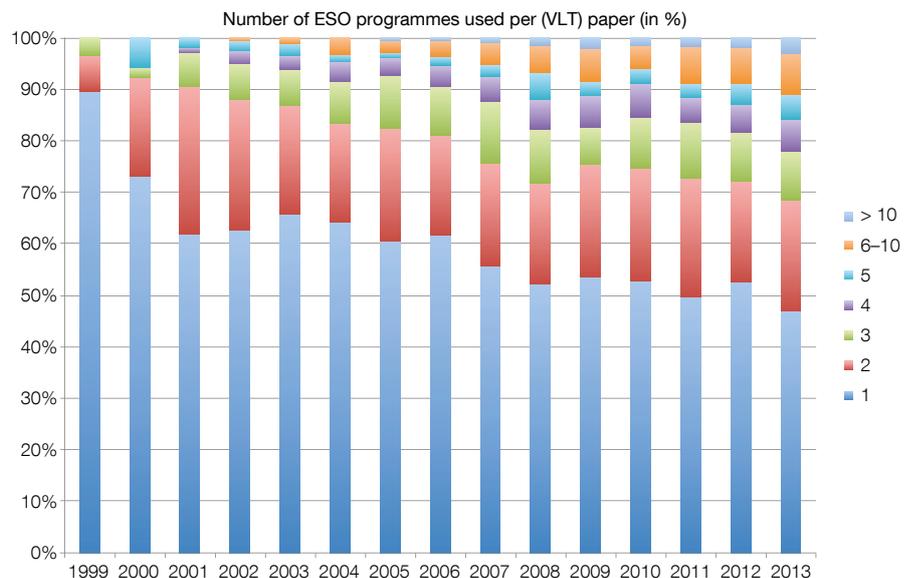
Over time, an increasing number of programmes per paper have been used by authors. In 1999, the first year of VLT/VLTI publications, 90% of the papers were based on a single ESO programme, while in 2013 more than half used data from at least two programmes; 3% were even based on data provided by more than ten different programmes (see figure on the right).

The ESO Science Archive continues to be an important resource for astronomers. By the end of the year, the *telbib* database contained more than 1300 papers that were exclusively or partly (i.e., along with proprietary data from ESO facilities) based on archival data: this corresponds to 13% of all *telbib* papers (1996–2013). For the VLT/VLTI, the percentage is even higher. In 2013, approximately a quarter of the papers made use of archival data

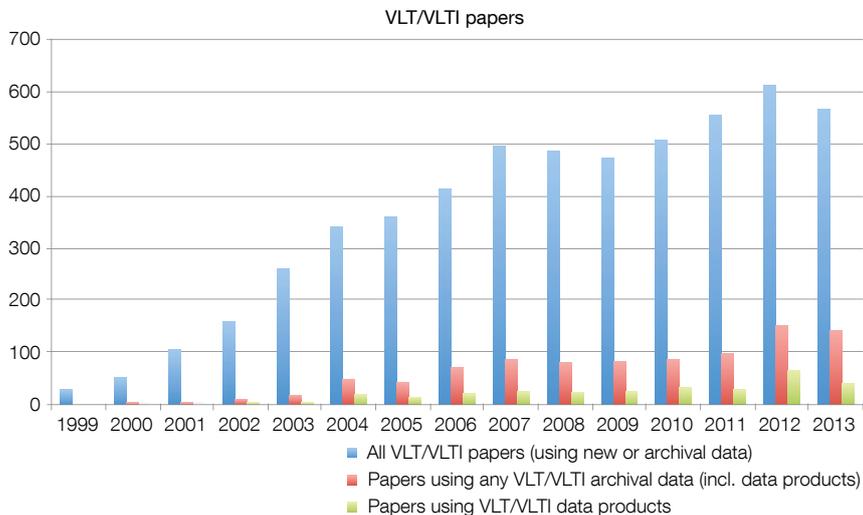
	VLT/VLTI	La Silla	Survey telescopes	APEX	ALMA	Total
1996		349				349
1997		389				389
1998		405				405
1999	29	324				348
2000	52	300				342
2001	105	316				399
2002	158	289				409
2003	260	305				512
2004	341	319				590
2005	359	296				606
2006	413	279		12		640
2007	494	313		1		718
2008	486	287		7		687
2009	471	260		15		658
2010	507	273	2	27		734
2011	553	283	13	26		782
2012	612	271	30	40	17	864
2013	565	273	38	43	40	840

Refereed papers using ESO data, 1996–2013. Papers can use data from more than one facility. VLT/VLTI: Papers using data generated by the VLT and VLTI instruments, including visitor instruments for which observing time is recommended by the ESO Observing Programmes Committee, e.g., VLT ULTRACAM, VLTI PIONIER. La Silla: Papers using data generated by facilities on La Silla, including visitor instruments for which observing time is recommended by the ESO OPC, e.g., NTT ULTRACAM. Papers based on data from non-ESO telescopes or

observations obtained during "private" periods are not included. Survey telescopes: Papers using data generated by ESO's survey telescope VISTA. APEX: Papers using data generated by APEX, including visitor instruments for which observing time is recommended by the ESO OPC, e.g., Z-Spec. Other visitor instruments (e.g., APEX/CONDOR) are excluded. Only papers based (entirely or partly) on ESO APEX time are included. ALMA: Papers using data generated by ALMA. Only papers based (entirely or partly) on European ALMA time are included.



Number of ESO programmes that provided data for VLT/VLTI papers 1999–2013.



Number of ESO programmes used per VLT/VLTI paper.

(142 out of 565). In addition to raw data, the ESO Archive also contains various data products. Data products retrieved by researchers were used in 7% of all VLT/VLTI publications in 2013 (40 out of 565; see figure above), and in 28% of the VLT/VLTI papers that deploy archival data (40 out of 142).

Facilities located on La Silla provided data for 273 papers. The HARPS planet finder, mounted at the ESO 3.6-metre telescope, played a major role as 73 papers used its observational data. Also older facilities such as FEROS, SOFI, and EFOSC2 continue to provide data for numerous scientific papers. Non-ESO telescopes (for instance the Swiss 1.2-metre Leonhard Euler Telescope) and

other facilities for which observing time is not evaluated by the ESO OPC (Observing Programmes Committee) are not included in the statistics.

VISTA, located in close proximity to the VLT/VLTI, is ESO's first telescope dedicated to surveys. In the past year, 38 papers were published. Almost half of them (15) deployed data from the VVV survey, followed by papers using data from the UltraVISTA (7), VIPERS (5), VIDEO (5) VMC and VHS (3 each) and VIKING (2) surveys.

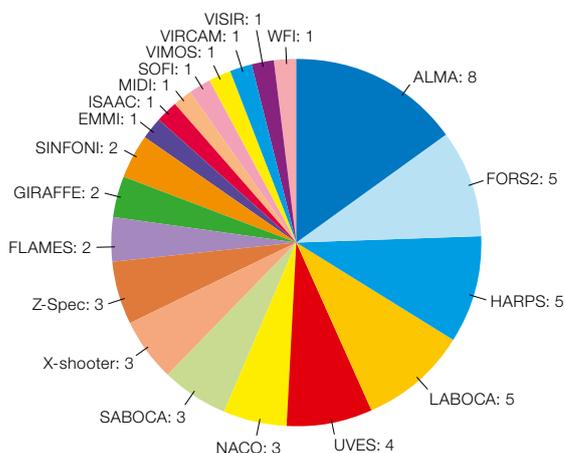
The number of APEX publications had climbed above 170 by the end of the year. This includes only scientific results from observations that were obtained during

ESO/APEX time and constitutes 55% of all APEX publications that have appeared since 2006 (171 out of 308).

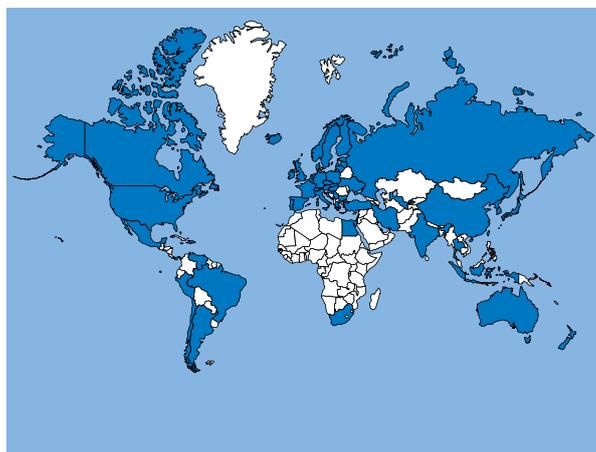
The *telbib* database also includes information about ALMA science papers. With 17 science papers published in 2012 and 40 this year, European ALMA time provided data for 67% of all ALMA papers published until the end of 2013 (57 out of 85). The ALMA bibliography is maintained jointly by the librarians at ESO and National Radio Astronomy Observatory (NRAO) as well as by the National Astronomical Observatory of Japan (NAOJ). While publications based on data from all ALMA partners are recorded in *telbib*, only those based on European observing time are counted in the ESO statistics.

This year, 27 scientific papers were featured in ESO press releases. The *telbib* database provides direct links to the respective press releases; likewise, science press releases link back to *telbib* and further into the ESO Archive from where the relevant observing data can be retrieved. The science press releases issued this year highlighted research from a variety of facilities. ALMA provided results for eight papers, followed by the FORS2 spectrograph, HARPS, and the LABOCA camera, which led to five press releases each. An overview of all instruments is shown in the figure, bottom left.

The ESO user community is truly worldwide. At present, *telbib* contains papers by first authors from 60 countries on all continents. Compared to 73 national members in the International Astronomi-



Left: Number of papers per instrument featured in ESO press releases in 2013.



Right: World map of first authors of ESO science data papers (dark blue).

cal Union, this leaves only a few white spots on the map of astronomically active countries. This wide geographic distribution shows ESO's importance in astronomical research and its international connectedness as illustrated in the map at the bottom of the previous page.

The statistics presented here are derived from the ESO Telescope Bibliography (*telbib*), a database of refereed papers published by the ESO user community that links publications with the data in the ESO Science Archive. *telbib* is developed and maintained by the ESO Library. It is compiled by scanning articles published in the major astronomical journals (the journals routinely screened for ESO-related keywords are: A&A, A&ARv, AJ, ApJ, ApJS, AN, ARA&A, EM&P, ExA, Icar, MNRAS, *Nature*, NewA, NewAR, PASJ, PASP, P&SS and *Science*) for relevant keywords (e.g., telescope and instrument names). All papers included in the database have been inspected visually to ensure that they use ESO observational data directly. Further information about *telbib* and various statistics and reports can be found at http://www.eso.org/sci/libraries/telbib_info.html.

The complete list of all 2013 papers is available at http://www.eso.org/libraries/telbib_info/AR/ESO_AnnualReport_publications2013.pdf. The file includes papers written by the ESO user community based on data generated by ESO facilities, followed by a separate listing of refereed publications by ESO scientists with or without use of ESO data.

Located about 1200 light-years from Earth in the constellation of Carina, the Toby Jug Nebula, more formally known as IC 2220, is an example of a reflection nebula. It is a cloud of gas and dust illuminated from within by a central star.

