

# ESO Calendar 2022

European Southern Observatory



## Cover

The stellar nursery Sharpless 29



This picture, taken with the OmegaCAM imager on ESO's VLT Survey Telescope at Cerro Paranal in Chile, shows Sharpless 29, which can be regarded as a true stellar nursery. Located 5500 light-years away in the constellation of Sagittarius, Sharpless 29 is an interstellar cloud of gas hosting the birth of new stars, with its brightest regions being illuminated by the hot young stars which have recently formed.

Credit: ESO



## January

Lunar halo above the Very Large Telescope



An otherworldly image, showing the Moon surrounded by a lunar halo on a rare cloudy night, above the four Unit Telescopes of the Very Large Telescope in northern Chile. This optical phenomenon is created when moonlight is refracted by ice and water droplets in the atmosphere. The right-most Unit Telescope beams lasers into the sky to create artificial stars, a technique used to correct for blurring caused by atmospheric turbulence.

Credit: J. C. Muñoz-Mateos/ESO



## February

Very Large Telescope image of the planetary nebula NGC 2899



This image of the fantastic planetary nebula NGC 2899 was captured using the FORS instrument on ESO's Very Large Telescope in northern Chile. Located 6500 light-years away, this object has never before been imaged in such striking detail, with even the faint outer edges of the nebula — a shell of gas expanding from a giant star at the end of its life — glowing over the background stars.

Credit: ESO



## March

Drone captures La Silla Observatory



ESO's La Silla Observatory sits nestled on the outskirts of the Chilean Atacama Desert. Located far from light pollution and at an altitude of 2400 metres, La Silla is an ideal location for stellar observations, with one of the darkest night skies on Earth. It is home to a large fleet of telescopes, including ESO's 3.6-metre Telescope, visible in the foreground.

Credit: R. Lucchesi/ESO



## April

Lunar eclipse over Paranal Observatory



It looks like the setting Moon is resting on ESO's Very Large Telescope in this extraordinary picture of a total lunar eclipse at Paranal Observatory in Chile's Atacama Desert. The photograph was taken at a location nine kilometres to the east of Paranal, from where the eclipsed Moon was just visible above the domes of the telescopes in the early morning twilight.

Credit: Y. Beletsky (LCO)/ESO



## May

The Carina Nebula in infrared light



This spectacular image of the Carina Nebula, taken with ESO's Visible and Infrared Survey Telescope for Astronomy at Paranal Observatory in Chile, reveals the dynamic cloud of interstellar matter and thinly spread gas and dust as never before. The massive stars in the interior of this cosmic bubble emit intense radiation that causes the surrounding gas to glow. By contrast, other regions of the nebula contain dark pillars of dust cloaking newborn stars.

Credit: ESO/J. Emerson/M. Irwin/J. Lewis



## June

Sunset at Paranal



Staff members at ESO's Paranal Observatory in Chile's Atacama Desert enjoy the sunset before night observations start. The group is accompanied by one of the 1.8-metre-diameter Auxiliary Telescopes which, along with three other Auxiliary Telescopes and four 8.2-metre Unit Telescopes, make up ESO's Very Large Telescope, the world's most advanced visible/infrared-light astronomical observatory.

Credit: G. Hudepohl (atacamaphoto.com)/ESO



## July

Comet NEOWISE visits ESO in Germany



Comet C/2020 F3, nicknamed NEOWISE, crosses the skies over the ESO Supernova and ESO Headquarters in Garching, Germany on 8 July 2020, on its journey back to the outer reaches of the Solar System, after having its closest encounter with our Sun on 3 July 2020.

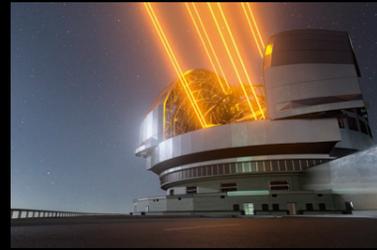
This rare treat was also accompanied by another nighttime phenomenon: the very unusual noctilucent clouds — shiny, icy clouds that look remarkably like water ripples in the night sky.

Credit: R. Shida/ESO



## August

ESO's Extremely Large Telescope



This image shows an artist's rendering of the final design of ESO's Extremely Large Telescope or ELT, due to start operating later this decade on Cerro Armazones in Chile's Atacama Desert. With its revolutionary mirror of 39-metres in diameter it will be "the world's biggest eye on the sky", exploring the Universe in unprecedented depth and detail. The ELT will point lasers into the sky to measure turbulence in the atmosphere and correct astronomical images accordingly.

Credit: ESO



## September

Very Large Telescope image of the galaxy Messier 61



This breathtaking image shows Messier 61, a glittering galaxy that is home to billions of stars and to a supermassive black hole at its centre. First discovered in 1779 and over 50 million light-years away, Messier 61 is part of the Virgo Supercluster of galaxies, to which our Milky Way also belongs.

The image was taken as part of ESO's Cosmic Gems Programme, an educational initiative to produce images of intriguing or visually attractive objects using ESO telescopes.

Credit: ESO



## October

Spinning stars over La Silla Observatory



This long-exposure shot, taken from ESO's La Silla Observatory in Chile, shows the luminous trails left by stars in the night sky as the Earth rotates, leading to their apparent motion. The stars appear to spin around a point in the sky just to the right of the centre of the picture — the celestial south pole. In the foreground are the ExTrA and BlackGEM telescopes.

Credit: ESO/A. Ghizzi Panizza (www.albertoghizzipanizza.com)



## November

Gems of the southern sky



A majestic view of part of the southern Milky Way, with the Southern Cross (Crux) constellation, symbol of ESO, taking centre stage. On the left, the brightest stars of Centaurus can be seen, including Alpha Centauri, a system comprising the closest stars to our Sun. To the right of the image is the Carina Nebula, home to Eta Carinae, currently the most massive star that can be studied in great detail.

Credit: ESO/P. Horálek



## December

Galactic arch above ALMA



The Milky Way's majestic arch stretches across the sky on the Chajnantor Plateau in Chile, home to the ALMA observatory, in which ESO is a partner. Located at an altitude of 5000 metres, ALMA consists of 66 antennas, some of which can be seen in the image. The antennas can be connected together to act as a single telescope, enabling ALMA to observe distant, ancient phenomena such as the birth of stars, the formation of exoplanets, and remote galaxies.

Credit: ESO/P. Horálek



## ESO

European Southern Observatory



ESO is the foremost intergovernmental astronomy organisation in Europe and the world's most productive ground-based astronomical observatory by far. It is supported by 16 countries: Austria, Belgium, the Czech Republic, Denmark, France, Finland, Germany, Ireland, Italy, the Netherlands, Poland, Portugal, Spain, Sweden, Switzerland and the United Kingdom, along with the host country of Chile and with Australia as a Strategic Partner. ESO carries out an ambitious programme focused on the design, construction and operation of powerful ground-based observing facilities enabling astronomers to make important scientific discoveries. ESO also plays a leading role in promoting and organising cooperation in astronomical research. ESO operates three unique world-class observing sites in Chile: La Silla, Paranal and Chajnantor. At Paranal, ESO operates the Very Large Telescope, the world's most advanced visible-light astronomical observatory and two survey telescopes. The Visible and Infrared Survey Telescope for Astronomy works in the infrared and is the world's largest survey telescope and the VLT Survey Telescope is the largest telescope designed to exclusively survey the skies in visible light. ESO is a major partner in the revolutionary astronomical observatory Atacama Large Millimeter/submillimeter Array (ALMA) and operates the Atacama Pathfinder Experiment (APEX), both located in the Chajnantor Plateau. ESO is currently building the 39-metre Extremely Large Telescope, the ELT, which will become "the world's biggest eye on the sky".

Moon phases are indicated in Universal Time.

Produced by the ESO Department of Communication.

# 2022





Lunar halo above the Very Large Telescope

# January 2022

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31





Very Large Telescope image of the planetary nebula NGC 2899

# February 2022

Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	1	2	3





Drone captures the La Silla Observatory

# March 2022

Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31





Lunar eclipse over Paranal Observatory

# April 2022

Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1

14

15

16

17





The Carina Nebula in infrared light

May 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

18

19

20

21

22





June 2022

Sunset at Paranal

Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	
				23							24						25								26						

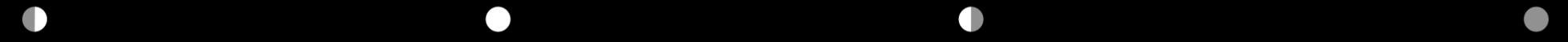




Comet NEOWISE visits ESO in Germany

# July 2022

Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31





ESO's Extremely Large Telescope

# August 2022

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

31

32

33

34

35





Very Large Telescope image of the galaxy Messier 61

# September 2022

Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1

36

37

38

39





Spinning stars over La Silla Observatory

# October 2022

Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

40 41 42 43 44

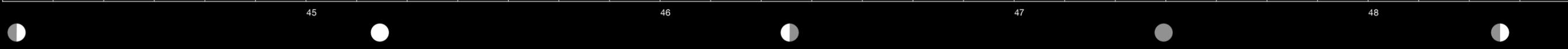




Gems of the southern sky

# November 2022

Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1





Galactic arch above ALMA

# December 2022

Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

49

50

51

52

