



TELESCOPIO
NAZIONALE
GALILEO

2024
calendarstars





JANUARY 2024

MON	TUE	WED	THU	FRI	SAT	SUN
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				

January 1: New Year

Galileo was the first to observe the Moon through a telescope. Here a mosaic of images of the Moon observed with DOLORES at the TNG in the U band.

Credits: TNG



OBSERVAT. SIDEREAE

Am dataram. Depreffiores inſuper in Luna cernuntur maculae maculae, quam clarioreſe plage; in illa tantum creſcente, quam decreſcente ſemper in lucis tenebrarumque coeſio, promiſcente hinc inde circa ipſas magnas maculas contineri partem lucidioris, veluti in deſcribendis figuris obſervauimus, neque depreffiores tantummodo ſunt didarum macularum termini, ſed aequaliores, nec rugae, aut ſpſtratae interrumpunt. Lucidior vero pars maxime propè maculas eminet, adeo vt, & ante quadraturam primam, & in ipſa ferme ſecunda circa maculam quandam ſuperiorem, bocelem maculae Lunae plagam occupantem valde attollantur tam ſupra illam, quam infra ingentes quaedam eminentiae, veluti appoſite praeficiunt delineationes.



Hæc

RECENS HABITAE

Vnum quoque obliuioni minime tradam, quod non ſiſi aliqua cum admiratione adnotauit: medium quafi Lunae locum à cauitate quadam occupatum eſſe reliquis omnibus maioribus, ac figura perfecte rotunditatis hæc prope quadraturam amboſque candentibus in ſecundis ſupra poſitis figuris quantum licuit imitatus ſum. Eundem quo ad obumbrationem, & illuminationem facit affectum, ac hæretet in tertis regio confinibus Boemæ, ſi montibus altiffimis, inque peripheriam perfecti circuli diſpoſitis occluderetur vti dicitur: in Luna enim adeo elatis iugis vallatur, vt extrema Hora tenebroſe Lunæ parti continentiſſima Solis lumine perſiſta ſpectetur, præſquam lucis vmbraeque terminus ad mediam ipſius figuræ diametrum pertingat. De more autem reliquarum macularum, vmbroſa illius pars Solem reſpicit, luminola vero verſus retrochors Lunæ conſtituitur; quod tertio libenter obſeruandam admonco, tanquam firriffimum argumentum, alperitatum, inæqualitatumque per totam Lunæ dariorem plagam diſperſarum; quarum quidem macularum ſemper nigiores ſunt illæ, quæ confinibus luminis, & tenebrarum continentiſſime ſunt, remotiores vero ſunt minores, ſum obſcuræ minus apparent, ita vt tandem cum Luna in oppoſitione totum implicaret orbem, modico, admodumque tenui diſcrimine, cauitatum opacitas ab eminentiarum candore diſcreperet.

Hæc quæ recentiffimus in clarioribus Lunæ regionibus obſeruantur, vnum in magnis maculis talis non compſcitur lacunarum, eminentiarumque differentia, qualem neceſſario conſtituere cogitur in parte lucidiori, ob mutationem figurarum ex alia, atque alia illuminatione radiorum Solis, prout multiplices poſſunt Lunam reſpicit, ut in magnis maculis conſiſtunt quidem arcule.

RECENS HABITAE



Hæc eadem macula ante ſecundam quadraturam nigrioribus equalibus terminis circumſcripta conſpicitur, qui tanquam altiffima montium iuga ex parte Soli aucterſa obſcuriores apparent, quæ vero Solem reſpiciunt lucidiores extant; cuius oppoſitum in cauitatibus accidit, quarum pars Soli aucterſa ſplendens apparet, obſcura vero, ac vmbroſa, quæ ex parte Solis ſita eſt. Imminuta deinde luminola ſuperficie, cum primam tota ferme diſta macula tenebris eſt obſcudata, clara mediæ diſta eminenter tenebras candentem. Hanc duplicem apparentiam ſæpentes figuræ com-moſtrant.

C a Vnum

FEBRUARY 2024

MON	TUE	WED	THU	FRI	SAT	SUN
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☽ 460th anniversary of the birth of Galileo Galilei

Galileo's drawings of the Moon obtained during the first observations of our satellite through a telescope. These observations showed an imperfect lunar surface, with chains of mountains and deep valleys, peppered with craters. They were published by Galileo in 1610 in Sidereus Nuncius.

Credits: digital version of Sidereus Nuncius by INAF – OABr



MARCH

2024

MON	TUE	WED	THU	FRI	SAT	SUN
				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

🌸 March 20 03:06 UTC Vernal equinox

M42 is a region of dust and gas situated south of Orion's Belt at a distance of 1.300 light-years. It is the nearest star formation area to Earth and one of the brightest nebulae in the night sky. At the Roque de Los Muchachos Observatory with a professional digital camera and a 1h exposure you can obtain pictures like this one.

Photo by M. Pedani

NEBVLOSA ORIONIS.



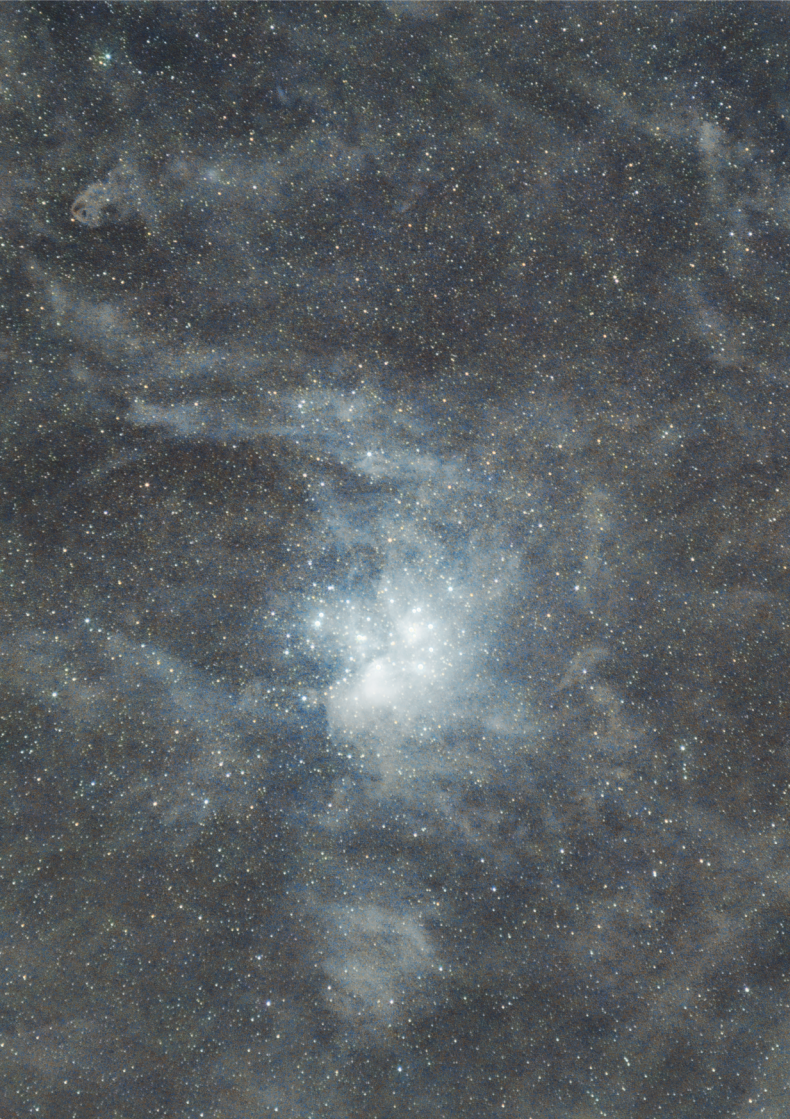
APRIL

2024

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Galileo's drawings of the Orion Nebula published in Sidereus Nuncius. During his observation in February 1617, Galileo detected for the first time three of the four stars of the Orion Trapezium Cluster, a tight open cluster in the heart of the Orion Nebula.

Credits: digital version of Sidereus Nuncius by INAF – OABr



MAY

2024

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May 1: International Workers' Day

The Pleiades cluster is among the nearest star clusters at a distance of about 444 light-years from Earth and it is located in the constellation Taurus. The cluster is dominated by hot blue luminous stars immersed in a reflection nebula, formed within the last 100 million years.

This picture was obtained with a 1h exposure from the Roque de Los Muchachos with a Canon 5D.

Photo by M. Pedani

PLEIADVM CONSTELLATIO.



JUNE

2024

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☼ June 20 20:51 UTC Summer solstice

A sketch showing the Pleiades published by Galileo in Sidereus Nuncius. The six brightest stars are visible to the naked eye. Between them Galileo counted several fainter ones, recording the positions of 36 stars in his sketch of the cluster. Thanks to these observations Galileo could suggest that the stars appeared as points of light due to their immense distance from Earth.

Credits: digital version of Sidereus Nuncius by INAF – OABr



JULY 2024

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🏰 FGG's 20th anniversary

On 7 July 2004 the constitution of Fundación Galileo Galilei was signed by INAF President Prof P. Benvenuti. It was a sign of respect, trust and stability for the staff that was working hard to operate and maintain the TNG. FGG is a Spanish non-profit foundation dedicated to support and promote astrophysics research through the operation of the TNG and any other scientific activity worth pursuing. Here a group picture of the staff on the 25th anniversary of TNG first light.

Photo by M. Cecconi



AUGUST 2024

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Galileo's telescope, built between 1609 and 1610 was an improvement of an earlier model by Johannes Lippershey. Even though Galileo did not invent the telescope, he very successfully built one and improved it for astronomical observations. The observations he conducted with it eventually led to the demise of the geocentric Ptolemaic model of the Universe and to the adoption of a heliocentric model. Galileo's telescope was a refracting telescope with a 20x magnification, a convex objective lens, a concave eyepiece in a long tube and a field of view of 15 arcmin.

Credits: Museo Galileo di Firenze



SEPTEMBER 2024

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🌬 September 22 12:44 UTC Autumnal equinox

SN 2023ixf is a Type II (core collapse) supernova located in the Pinwheel Galaxy (M101), about 21 million light-years from Earth. It was first observed on 19 May 2023 and it is expected to have left behind either a neutron star or a black hole. This image was obtained with DOLORES at the TNG in the BVR filters.

Credits: TNG



OCTOBER 2024

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Galileo observed with the naked eye SN 1604, a Type Ia supernova that appeared in the sky during the night of 9 October 1604 in the constellation Ophiuchus. Galileo published his studies about the “new star” in its treatise titled *Dialogo de Cecco di Ronchitti*. In the image, Galileo showing his telescope to the Doge and the Venetian Senators (1609).

Credits: *Vies des Savants Illustres* by Louis Figuier (Paris, 1870). Photo by Oxford Science Archive/Print Collector/Getty Image



NOVEMBER 2024

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Top: Jupiter and three of its Galilean moons Io, Europa and Ganymede, from left to right, observed on 13 October 2023 in the U filter with DOLORES at the TNG.

Credits: L. Di Fabrizio and A. Harutyunyan.

Bottom: An image of Jupiter obtained with an amateur telescope and a digital camera (Panasonic S1H). The finest details can be imaged nowadays with non-professional instruments and an excellent sky like the one available at the Roque de Los Muchachos.

Photo by A. Tormena

DECEMBER 2024

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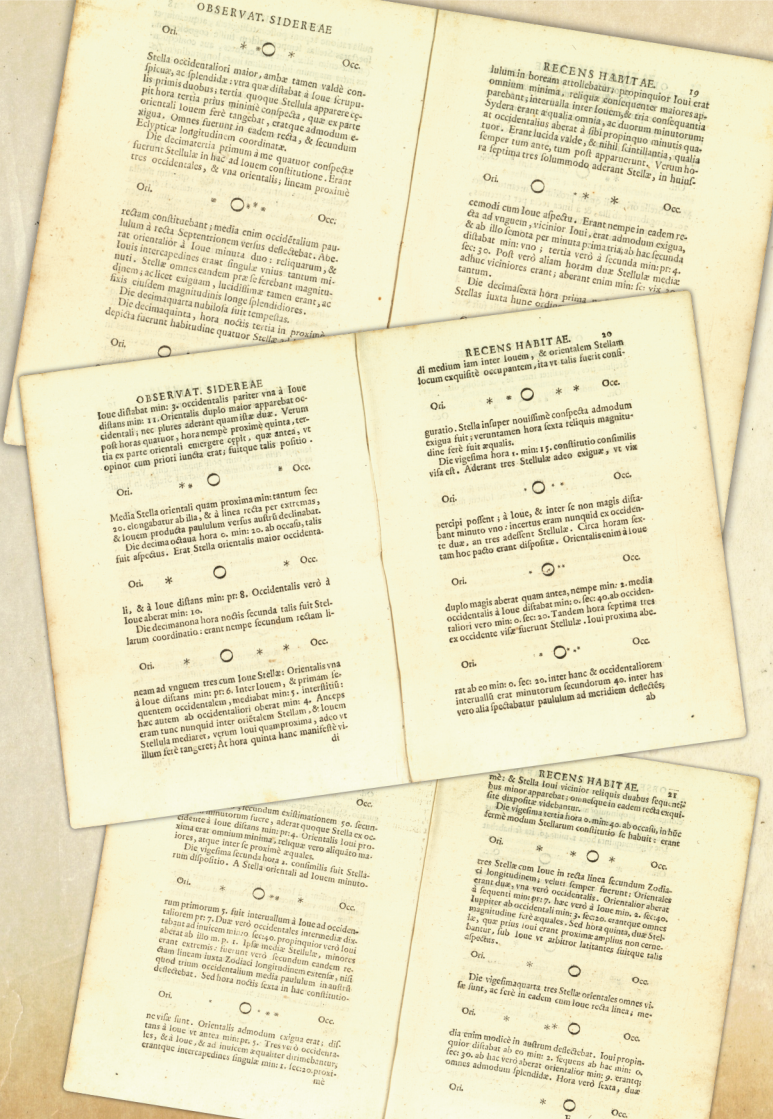
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December 25: Christmas Day * December 21 09:21 UTC Winter solstice

These are the notes of the observations of Jupiter made by Galileo over successive nights. His observations revealed four star-like objects in line with it. Galileo inferred that these were moons orbiting Jupiter just like our Moon orbits the Earth. Nowadays they are also known as the Galilean moons.

Credits: digital version of Siderius Nuncius by INAF – OABR



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MARCH

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APRIL

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JULY

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AUGUST

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SEPTEMBER

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OCTOBER

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NOVEMBER

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DECEMBER

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460 years since
Galileo Galilei

1564-2024

460 years after the birth of Galileo Galilei, we remember the "Father of Modern Science", who taught us the scientific method based on experiments, observations, and measurements. In this calendar, we highlight some of the discoveries that Galileo made by directing his "perspicillum" to the sky.

Our Telescope and our Foundation not only bear the name of Galileo but still pursue his legacy to describe the world we are living in and to investigate the universe with curiosity and precision by using the right tools.

Adriano Ghedina - TNG Director



Martinet del. et Sc.



**TELESCOPIO
NAZIONALE
GALILEO**



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