

Spotting Mars with Faulkes Telescope

Metadata

General Information:

Title: Spotting Mars with Faulkes Telescope

Short description: Students incorporate Faulkes Telescope to spot Mars

Keywords: Las Cumbres Observatory, Faulkes telescope, Mars

Educational Context:

Students learn about Las Cumbres Observatory (LCO) observation portal, how to set up an account, Faulkes Telescope and how it can spot objects in space, request an observation, see images of previously requested objects.

Ages: 13-14.

Prerequisites: None

Duratin: 3 hours

Having the power of 25 telescopes around the world at one's disposal!

DONATE

Explore LCO
Education & Outreach
Science
For Observers

Twenty-five telescopes at seven sites around the world working together as a single instrument

Call for 2023 Global Sky Partners is now open. Deadline: 26 May 2023 at 23:00 UTC.

TOP HIGHLIGHT

NEWS

LCO Data Confirm the Discovery of an Earth-Size Exoplanet

Images of Mars with Faulkes telescope:

Configurations

Type: EXPOSE				Target: Mars	
Target			Acquisition		
Type	ORBITAL_ELEMENTS		Mode	OFF	
Name	Mars		Extra Params	None	
Epochofel	58217		Guiding		
Orbinc	1.8482				
Longascnode	49.5086		Optional	true	
Eccentricity	0.0934		Mode	ON	
Scheme	JPL_MAJOR_PLANET		Optical Elements	None	
Argofperih	286.6108		Extra Params	None	
Meandist	1.5238		Constraints		
Meananom	275.9332				
Dailymot	0.5240		Max Airmass	1.6000	
Extra Params	None		Min Lunar Distance	30	
Instrument Configs			Max Lunar Phase	1	
			Extra Params	None	
Mode	Exposure Time	Exposure Count	Optical Elements	Extra Params	
full_frame	1	1	filter: B	bin_x: 1, bin_y: 1, defocus: 0, offset_ra: 0, offset_dec: 0	

Mars basic

RequestGroup # 1689591

State Updated Submitted Proposal Submitter IPP Type 

✓COMPLETED 2023-04-28 21:33:59 2023-04-23 15:41:24 FTPEPO2014A-004 Portugal 1.050000 NORMAL


Sub-requests / #3209388


3209388

⌚ Duration: 138 seconds
📷 Instrument: 1.0 meter
Sinistro

✓ COMPLETED

☑ Acceptability Threshold: 90%
📅 2023-04-28 21:33:59

 View in API

 Download



Details

Scheduling

Visibility

Data

Click a row in the data table to preview the file below. Click preview for a larger version.



tfn1m014-fa20-20230428-0088-e91.fits.gz

✓ Download Selected  Download All  View on Archive

<input type="checkbox"/>	filename	DATE_OBS	filter	obstype	Reduction
<input type="checkbox"/>	tfn1m014-fa20-20230428-0088-e00.fits.gz	2023-04-28 21:33:43	B	EXPOSE	raw
<input checked="" type="checkbox"/>	tfn1m014-fa20-20230428-0088-e91.fits.gz	2023-04-28 21:33:43	B	EXPOSE	reduced

Showing 1 to 2 of 2 rows

Mars basic

RequestGroup # 1689591

State Updated Submitted Proposal Submitter IPP Type 

✓COMPLETED 2023-04-28 21:33:59 2023-04-23 15:41:24 FTPEPO2014A-004 Portugal 1.050000 NORMAL

Sub-requests / #3209388

3209388

⌚ Duration: 138 seconds
📷 Instrument: 1.0 meter
Sinistro

✓ COMPLETED

☑ Acceptability Threshold: 90%
📅 2023-04-28 21:33:59

 View in API

 Download



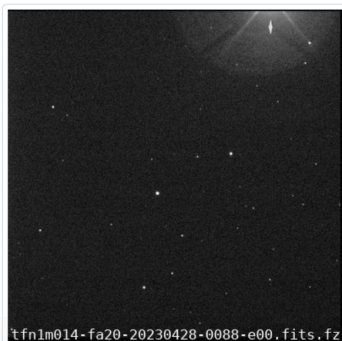
Details

Scheduling

Visibility

Data

Click a row in the data table to preview the file below. Click preview for a larger version.



tfn1m014-fa20-20230428-0088-e00.fits.gz

✓ Download Selected  Download All  View on Archive

<input type="checkbox"/>	filename	DATE_OBS	filter	obstype	Reduction
<input checked="" type="checkbox"/>	tfn1m014-fa20-20230428-0088-e00.fits.gz	2023-04-28 21:33:43	B	EXPOSE	raw
<input type="checkbox"/>	tfn1m014-fa20-20230428-0088-e91.fits.gz	2023-04-28 21:33:43	B	EXPOSE	reduced

Showing 1 to 2 of 2 rows

Google Chrome

UNIT 12 Space

You learn

- about space travel
- about living in outer space
- how to use phrasal verbs

You can

- check facts
- talk and write about life in space
- write a sequel to a story

Vocabulary

- 1** Make sure you know what the words in the box mean. Use a dictionary to help you.

a space shuttle an explosion a plaque
 an astronaut an orbit an asteroid

Free flow

- 2** Discuss the questions in pairs.

- 1 Would you like to travel into space? Why / Why not?
- 2 What facts do you know about space travel?

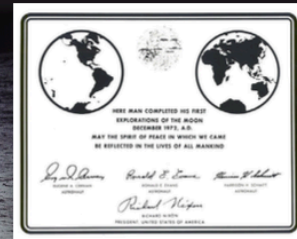
- BISt** **3** Read the text. Match the titles with the paragraphs. There is one title you won't use.

- 1 A day in space
- 2 When things go wrong
- 3 Eating in space
- 4 A message on the moon
- 5 Paying passengers
- 6 Who owns space?

Get talking

- 4** Make notes of 6 facts from the text. Then get together with a partner and test each other.

Who was the first ...? How often ...?
 When did he set foot ...? How much ...?
 Why did the McDonnell Douglas
 company want to ...?



5 In 1984, the engineering company McDonnell Douglas gave NASA \$66,000 to take Charlie Walker, a person who worked for them, on their STS-41D flight to do some research. In 2001, Dennis Tito paid \$20 million to become officially the world's first space tourist.

1 A space shuttle takes 90 minutes to orbit the Earth. In these 90 minutes, daylight and night time constantly change for the astronauts. In fact, they see 16 sunsets and 16 sunrises! Altogether, 45 minutes of the journey are spent in daylight, and 45 minutes in the dark.

3 Astronauts on the shuttle can choose from about 100 different food items and 50 drinks. However, a word of warning – the taste of food often changes in space and your favourite food on the ground might taste disgusting 200 kilometres above the Earth.

4 Everyone knows that Neil Armstrong was the first man to walk on the moon. But did you know that his Apollo 11 mission left a plaque on the moon? It says, *Here men from the planet Earth first set foot upon the Moon. July 1969, A.D. We came in peace for all mankind.*

2 Space travel has always been a dangerous business. Two of the most tragic accidents in the last 30 years were the *Challenger* and *Columbia* space shuttle disasters. The *Challenger* exploded after 1 minute of its flight in 1986. In 2003, the *Columbia* broke up when it re-entered the Earth's atmosphere. On both flights all seven members of the crew died.

UNIT 12 Space

Reading

- 1 Read about three space missions and the statements in the box on page 93. Decide for which mission each statement is TRUE and put a cross in the correct box. The statement may be correct for more than one mission.



MISSIONS TO SPACE

MISSION:

EXPLORER 1

DATE: 1958

WHAT HAPPENED: This was the first time that the United States entered into outer space. This small unmanned satellite was taken out of the Earth's atmosphere on the Juno 1 rockets and spent 100 days orbiting around the Earth making a study of the cosmic rays in the Van Allen radiation belt. After completing its work, the spacecraft spent another twelve years in space before returning back down towards Earth. As expected though, it never made it to the surface of the planet and broke up into thousands of pieces as it re-entered the Earth's atmosphere.

MISSION:

APOLLO 11

DATE: 1969

WHAT HAPPENED: On July 20th 1969, after ten years of test flights into space, NASA finally realised one of mankind's biggest dreams when astronauts Neil Armstrong and Buzz Aldrin guided their Eagle lander onto the surface of the moon. After 21 and a half hours the pair returned to join the other member of their crew, Michael Collins, who had waited above inside the command module Columbia.

Four days later, after a total of eight days in space, all three astronauts returned safely to Earth when they splashed down in the middle of the Pacific Ocean.

MISSION:

CHALLENGER

DATE: 1986

WHAT HAPPENED: In 1981, NASA introduced the world to its space shuttles. These were reusable spacecrafts that could make more than one journey into space. The success of the programmes made many people believe that space travel would soon be commonplace. However, this all changed on January 28th 1986, when the Challenger space shuttle spectacularly exploded moments after taking off, killing all seven astronauts on board. It was the first time that NASA had seen people killed since 1967 when three astronauts were killed on the ground in a test for Apollo 1.

Using Faulkes telescope to see objects in space. Pupils work and read unit 12 in their books and do exercises. There are many objects that we can request an image for using the observation portal, but the pupils have decided on Mars. In this activity you are trying to request an image from Mars, the Red Planet, using queue-scheduled mode but how should you set the configuration, target, constraint, and window?

Planning and setting the telescope: Pupils sign up for an account and try to request an image. It is challenging because they are learning this for the first time.

Familiarizing and Planning: You need to familiarize yourself with the observation portal, look at previous requests and think about an object that you want an image of.

Conclusion and evaluation:

Think about the possibilities that this telescope can do. Did you find previous images interesting? What images would you like to have?

Evaluation and reflection:

How useful is this telescope in helping you see objects in space? What are the challenges in using this portal? What can you do to make requesting an image more successful?

Sources:

Las Cumbres Observatory <https://observe.lco.global/accounts/login?next=%2Fcreate>

More! 4 Student's Book <https://www.helbling.com/at/de/product/more-4-enriched-course-students-book-e-book-399045972>

More! 4 Workbook <https://www.helbling.com/at/de/product/more-4-enriched-course-workbook-mit-e-book-399045975>