



[Photo by Javier Miranda on Unsplash](#)



[Images](#)[Global Maps](#)[Articles](#)[Blogs](#)

earth
observatory

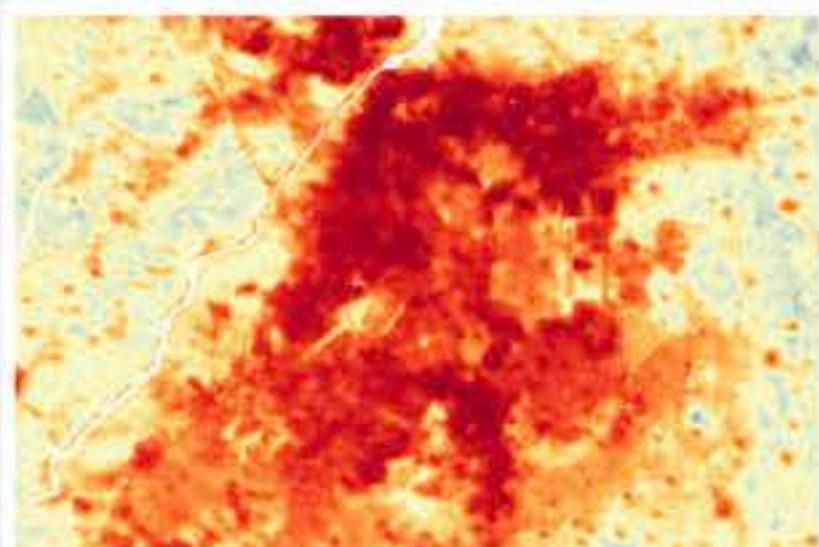
EO Explorer

Topics



Temperature Extremes 2024

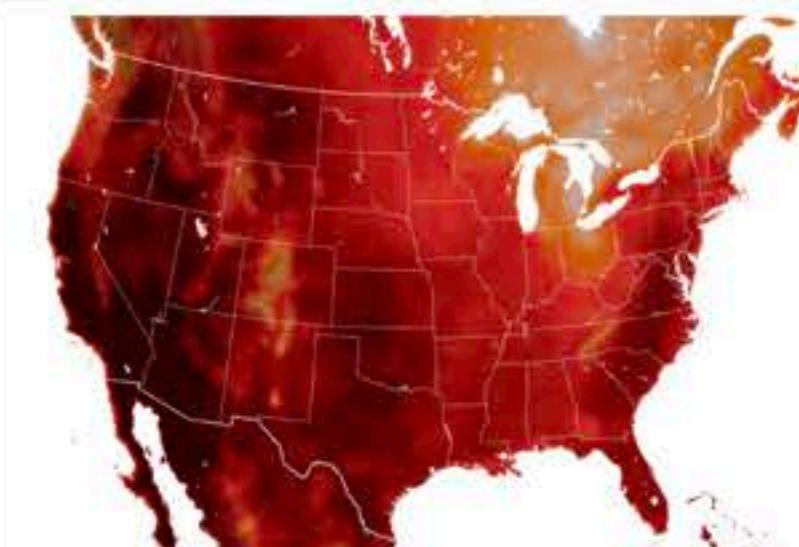
Warmer-than-average temperatures are showing up locally and globally, with consequences for people, landscapes, and ecosystems.

[Image](#)

Beating the Heat in Pakistan

Greening projects in Lahore could help cool the city as climate change and rapid urbanization intensifies the urban heat island effect.

Published Jul 16, 2024

[Image of the Day](#)[Heat](#)[Temperature Extremes](#)[Image](#)

Extreme Heat Hammers U.S. Coasts

As summer heat hit the western and eastern U.S. in July 2024, temperatures have been especially high in the Southwest.

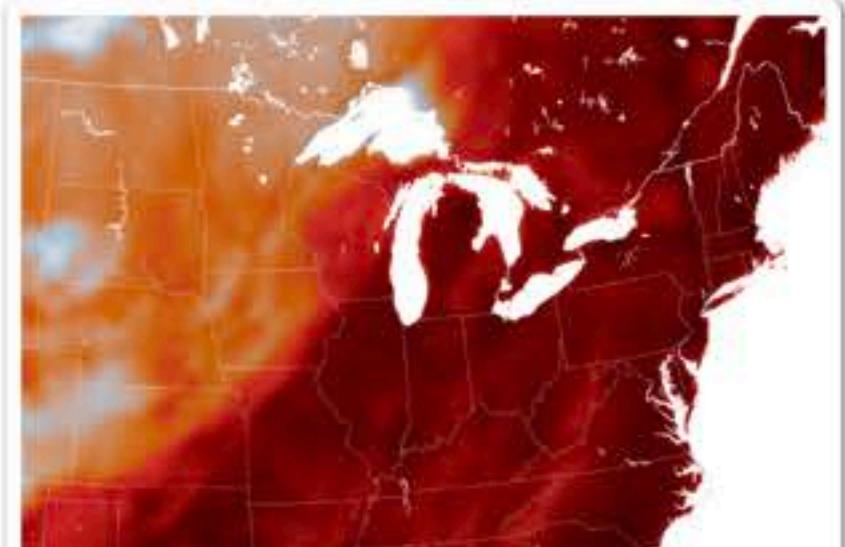
Published Jul 11, 2024

[Image of the Day](#)[Heat](#)[Temperature Extremes](#)[Image](#)

In the Grip of Global Heat

Heat waves rolled through parts of Europe, the Middle East, and South Asia, leaving vulnerable populations at risk.

Published Jun 27, 2024

[Image of the Day](#)[Atmosphere](#)[Human Presence](#)[Image](#)

A Blast of Heat in the East

A heat dome broke temperature records in the U.S. Midwest and Northeast.

Published Jun 20, 2024

[Image of the Day](#)[Heat](#)[Temperature Extremes](#)

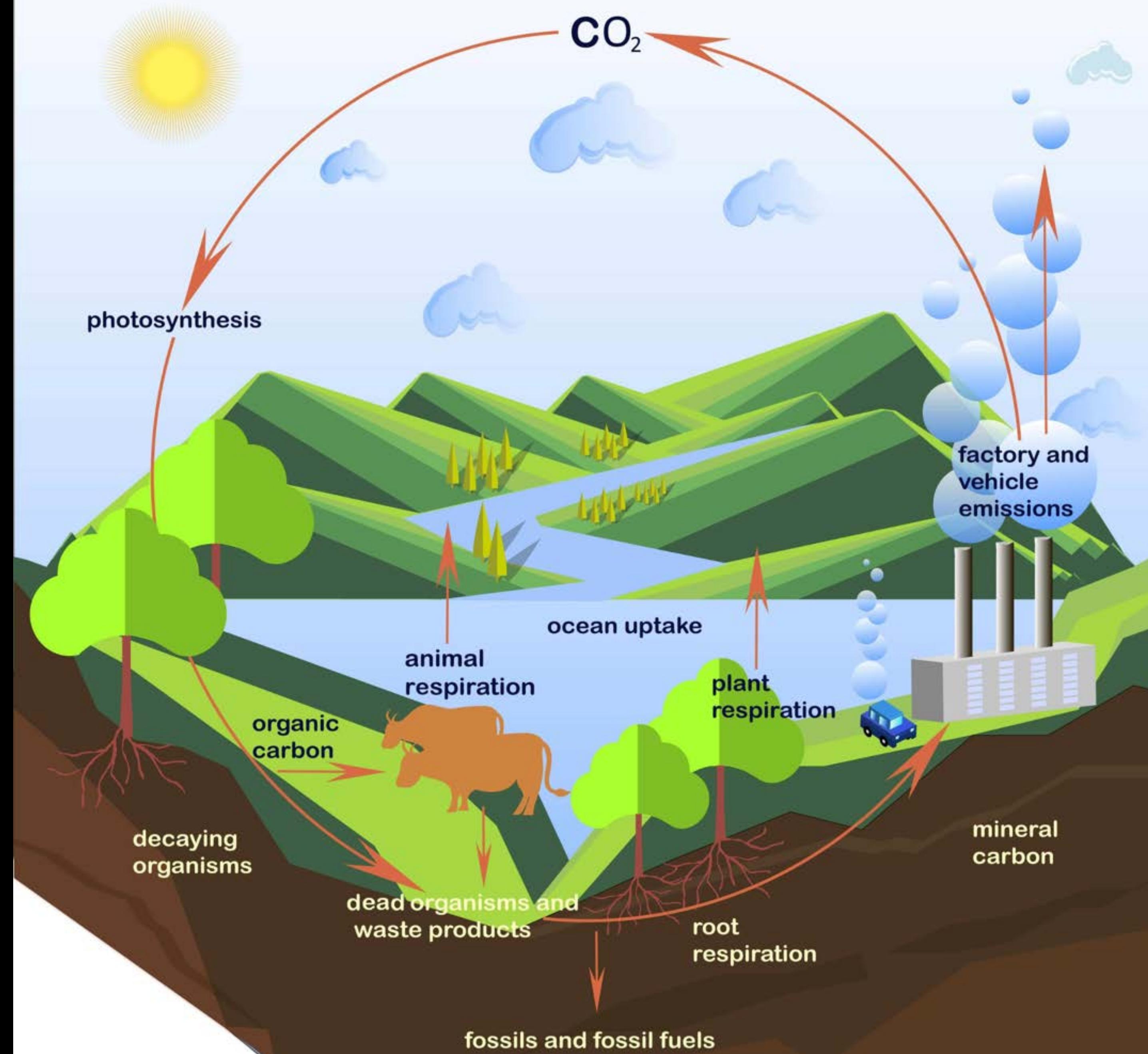
CO₂ IS A NORMAL PART OF THE ATMOSPHERE, THAT LAYER OF GASES AROUND THE PLANET THAT'S LIKE A WARM BLANKET, KEEPING US COZY.



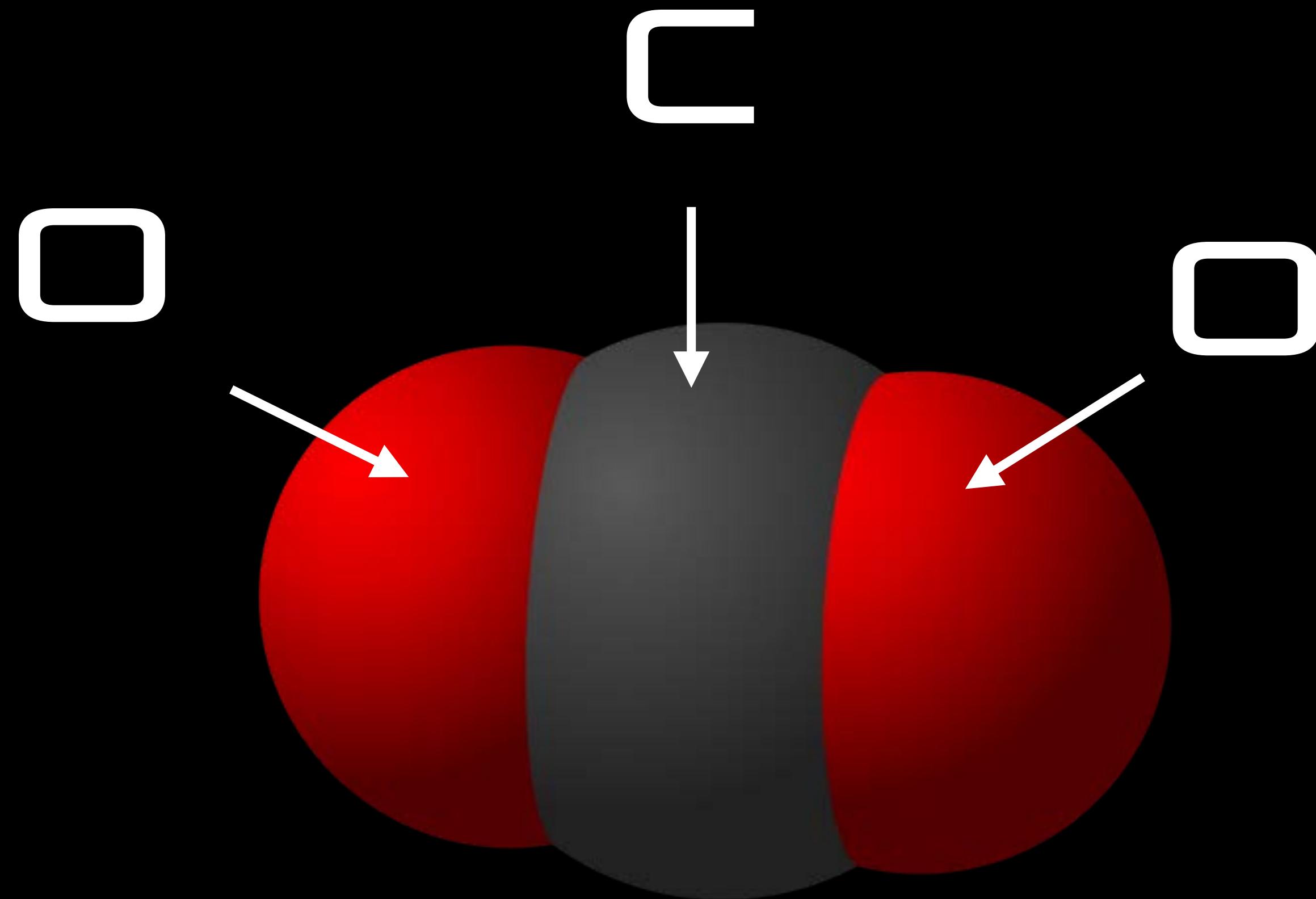
BUT ADDING MORE CO₂ FROM FOSSIL FUELS IS LIKE MAKING THAT BLANKET THICKER, WHICH RAISES THE TEMPERATURE ON THE GROUND.



CARBON CYCLE



[HTTPS://WWW.BGS.AC.UK/](https://www.bgs.ac.uk/discovering-gEOLOGY/climate-change/the-carbon-story/)
[DISCOVERING-GEOLOGY/](https://www.bgs.ac.uk/discovering-gEOLOGY/climate-change/the-carbon-story/)
[CLIMATE-CHANGE/THE-](https://www.bgs.ac.uk/discovering-gEOLOGY/climate-change/the-carbon-story/)
[CARBON-STORY/](https://www.bgs.ac.uk/discovering-gEOLOGY/climate-change/the-carbon-story/)



CARBON DIOXIDE (C O₂)

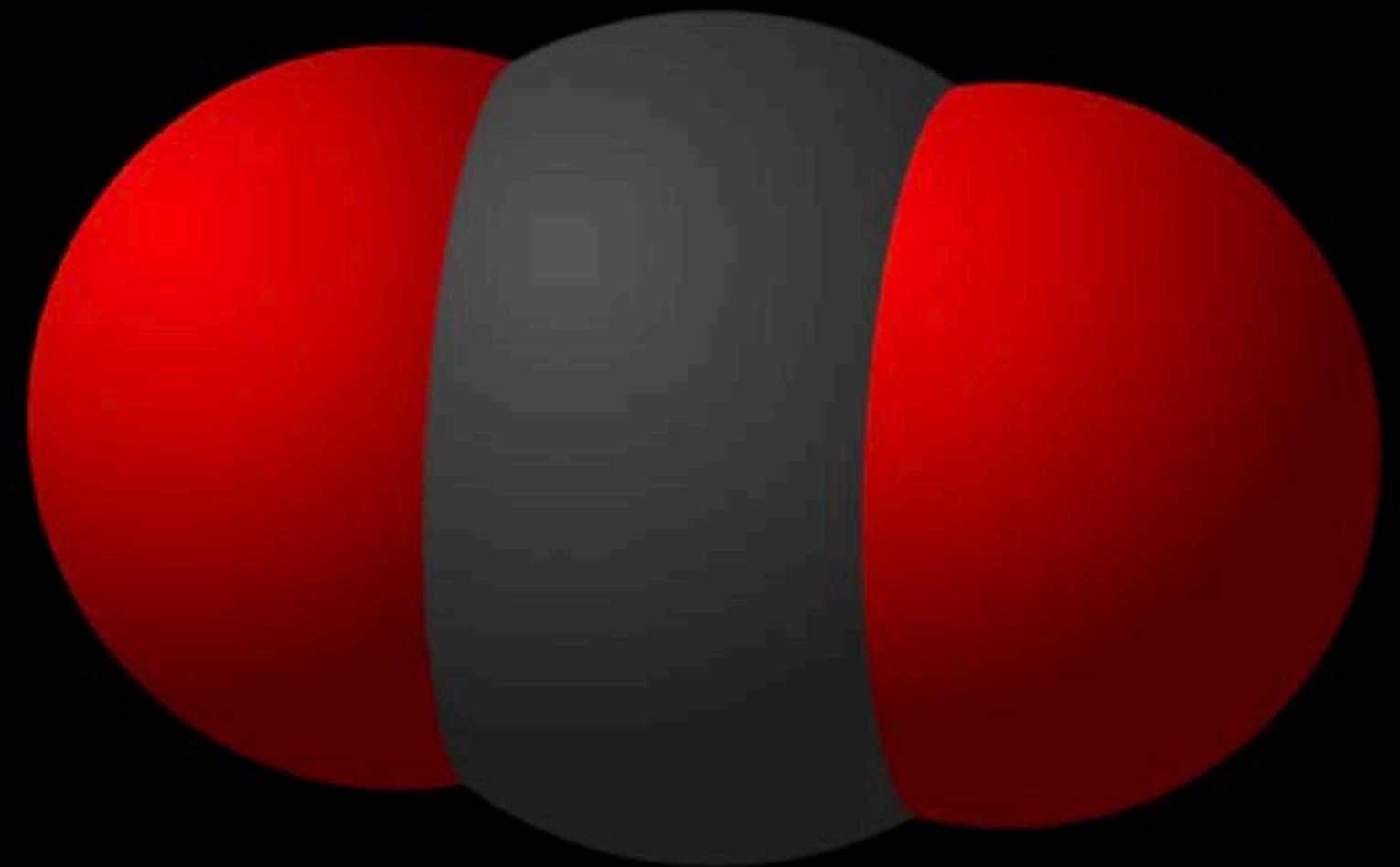


A man wearing a plaid shirt and a white apron is standing at a long wooden counter. He is focused on his work, which involves handling dough or bread rolls. There are several white bowls and a bottle on the counter in front of him.

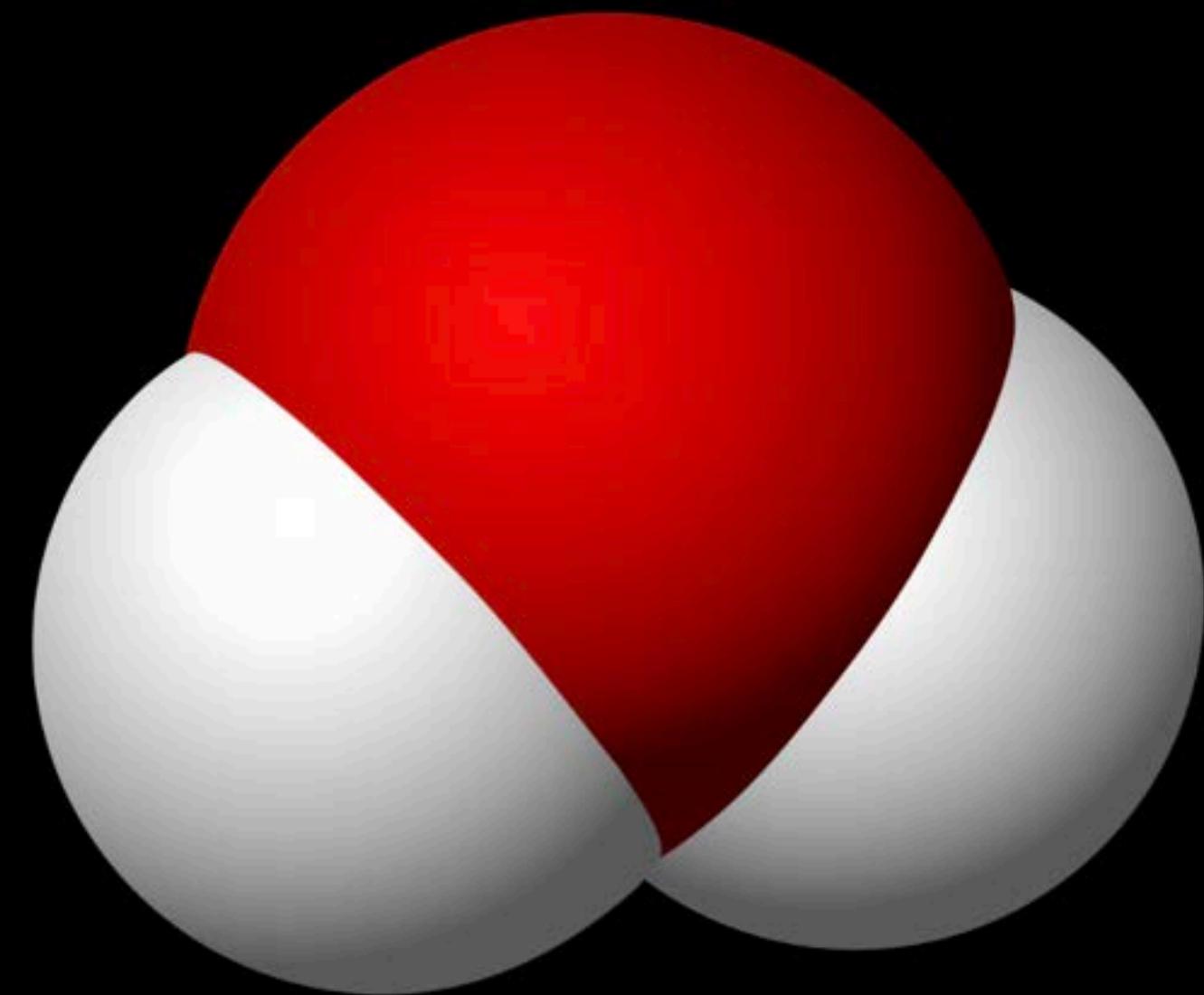
A woman wearing an orange shirt and a white apron is also working at the same wooden counter. She is engaged in the same task as the man, likely preparing bread rolls. A large metal tray is visible behind her.



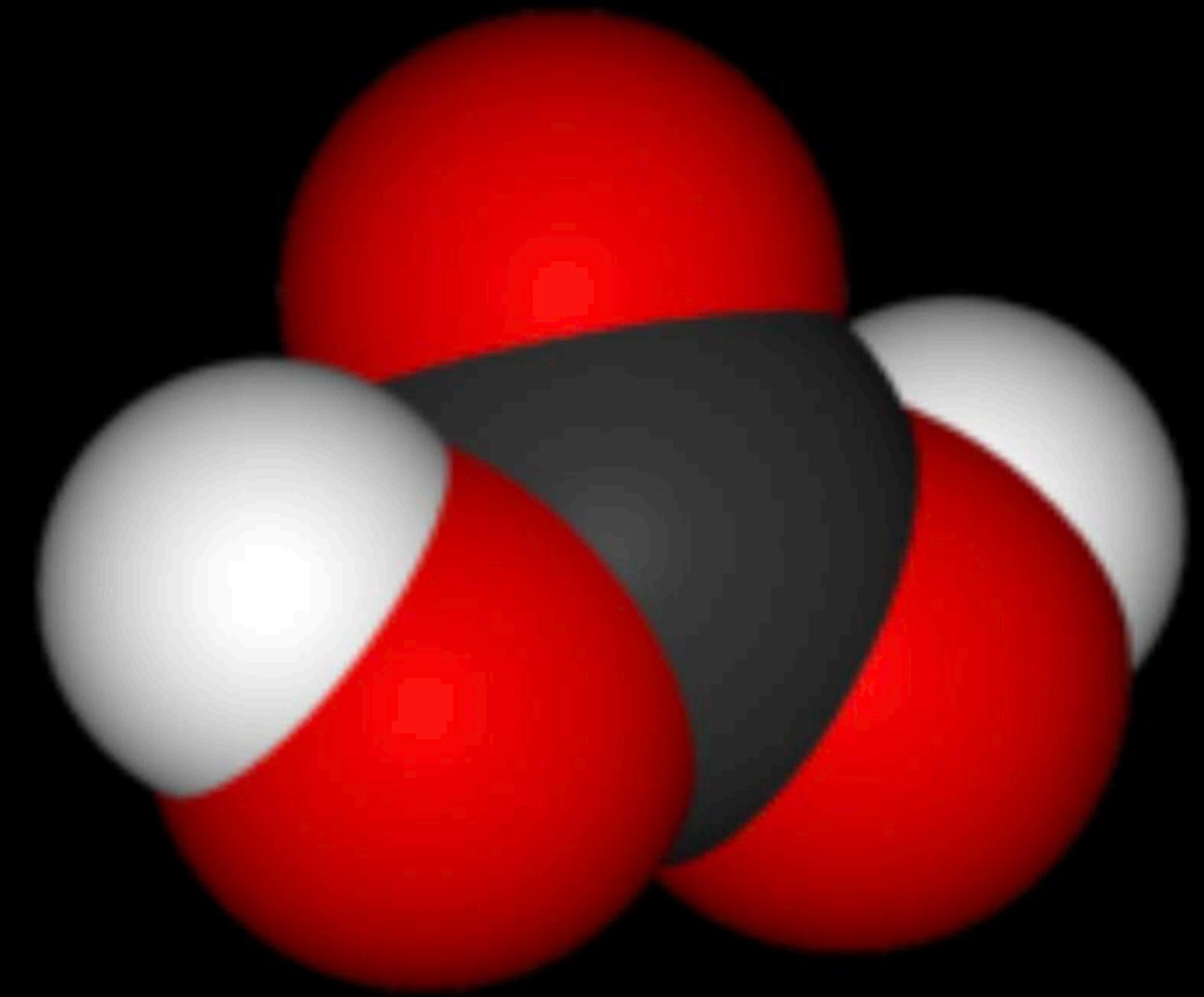




CARBON DIOXIDE (C O₂)



WATER (H₂ O)



CARBONIC ACID (H₂CO₃)



SEARCH FOR ANOTHER



PLANET

FROM SPACE TO CODE: USING NASA'S OPEN DATA APIs WITH KEPLER





LinkedIn

<CodeLab>

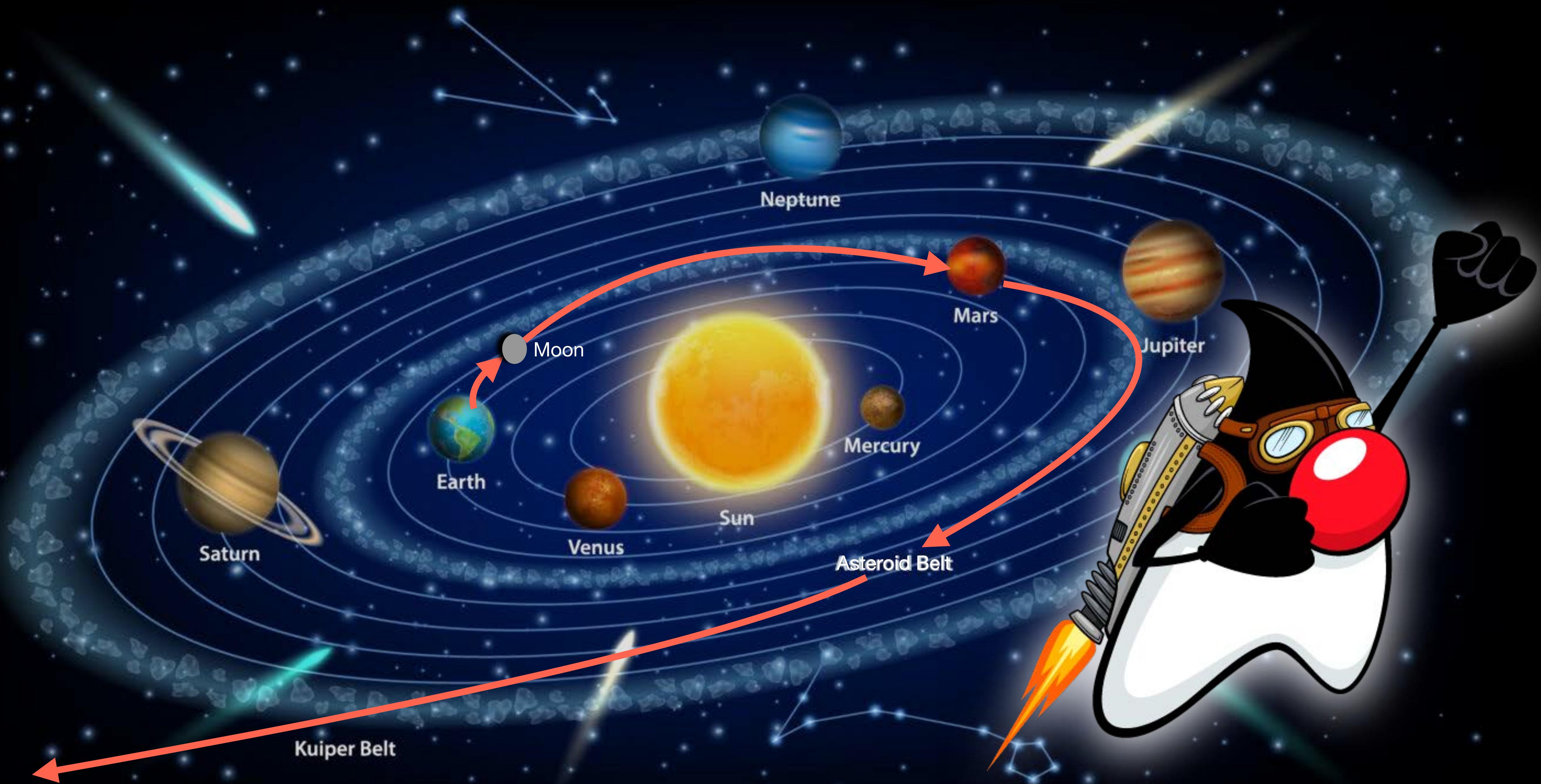


Green
Software
Foundation





VOXXED DAYS
AMSTERDAM



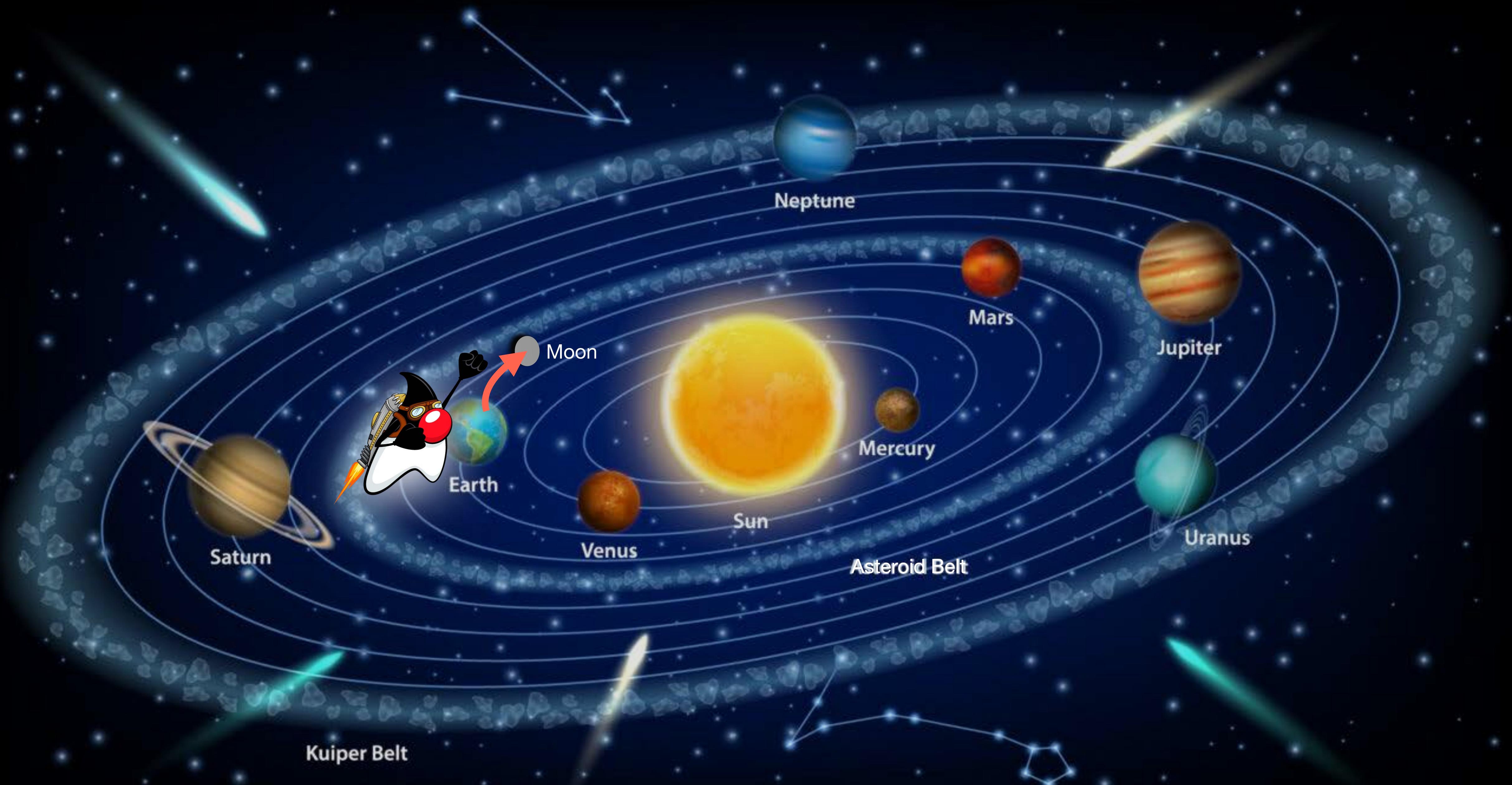


IS THERE LIFE ON
OTHER PLANETS?

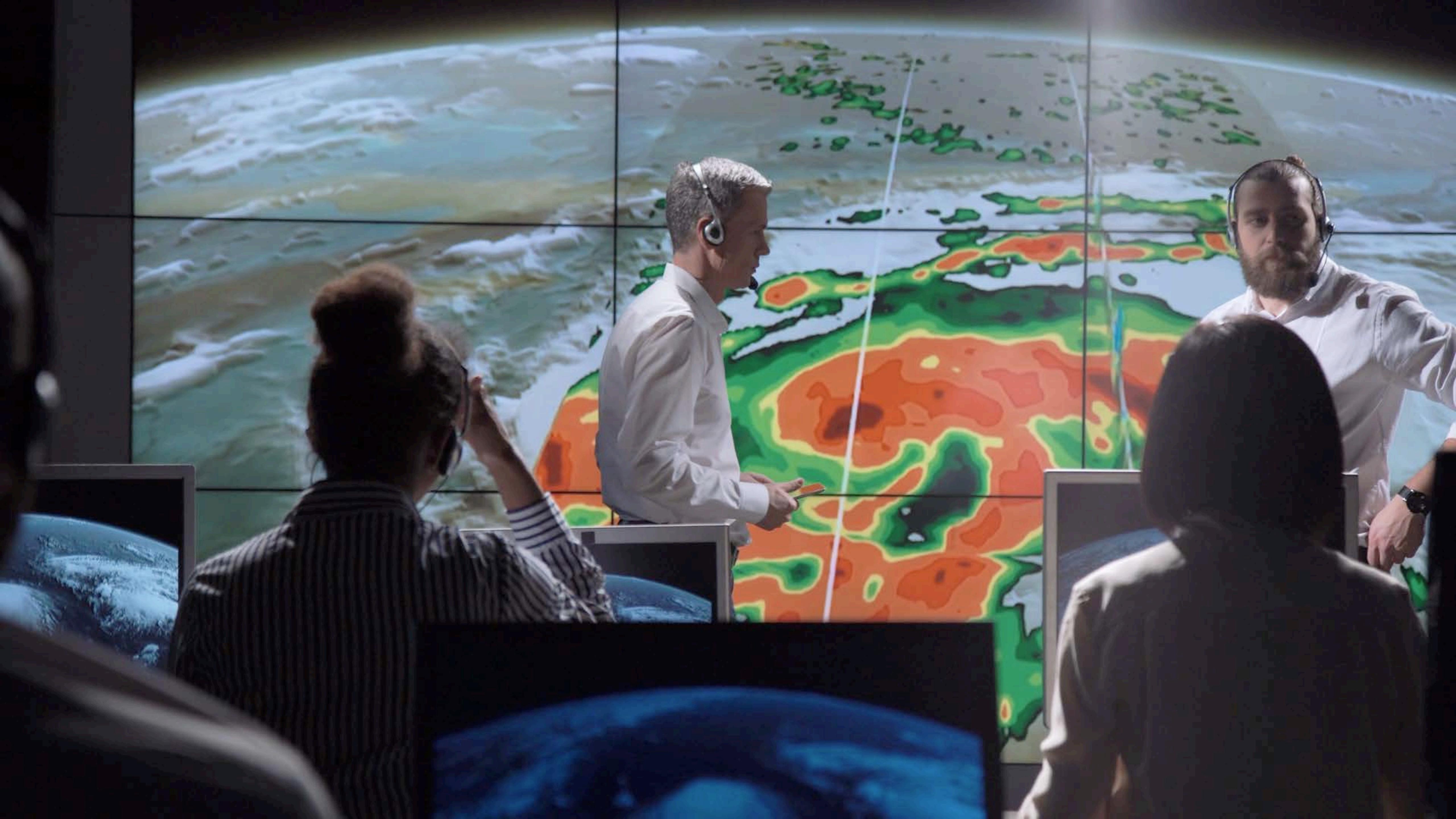


ARE WE THE ONLY
ONE?









NASA API:

ASTRONOMY PICTURE
OF THE DAY



Apollo 11

Real-Time Mission Experience

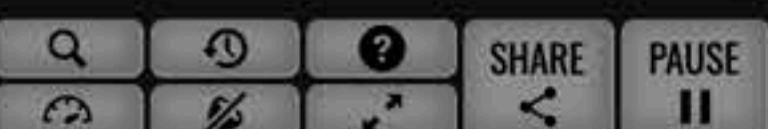
Wed Jul 16 1969 | 03:30:57 PM +200

Ground Elapsed Time (GET): -00:01:03

GO



TRANSCRIPT MISSION MILESTONES COMMENTARY



-00:02:07 Public The target for the Apollo 11 astronauts, the Moon, at liftoff Affairs we'll be at a distance of 218,096 miles away. Just passed the 2-minute mark in the countdown. T-minus 1 minute, 54 seconds and counting. Our status board indicates that the oxidizer tanks in the second and third stages now have pressurized. We continue to build up pressure in all three stages here at the last minute to prepare it for liftoff. T-minus 1 minute, 35 seconds on the Apollo mission, the flight to land the first men on the Moon. All indications are coming in to the Control Center at this time indicate we are GO. One minute, 25 seconds and counting. Our status board indicates the third stage completely

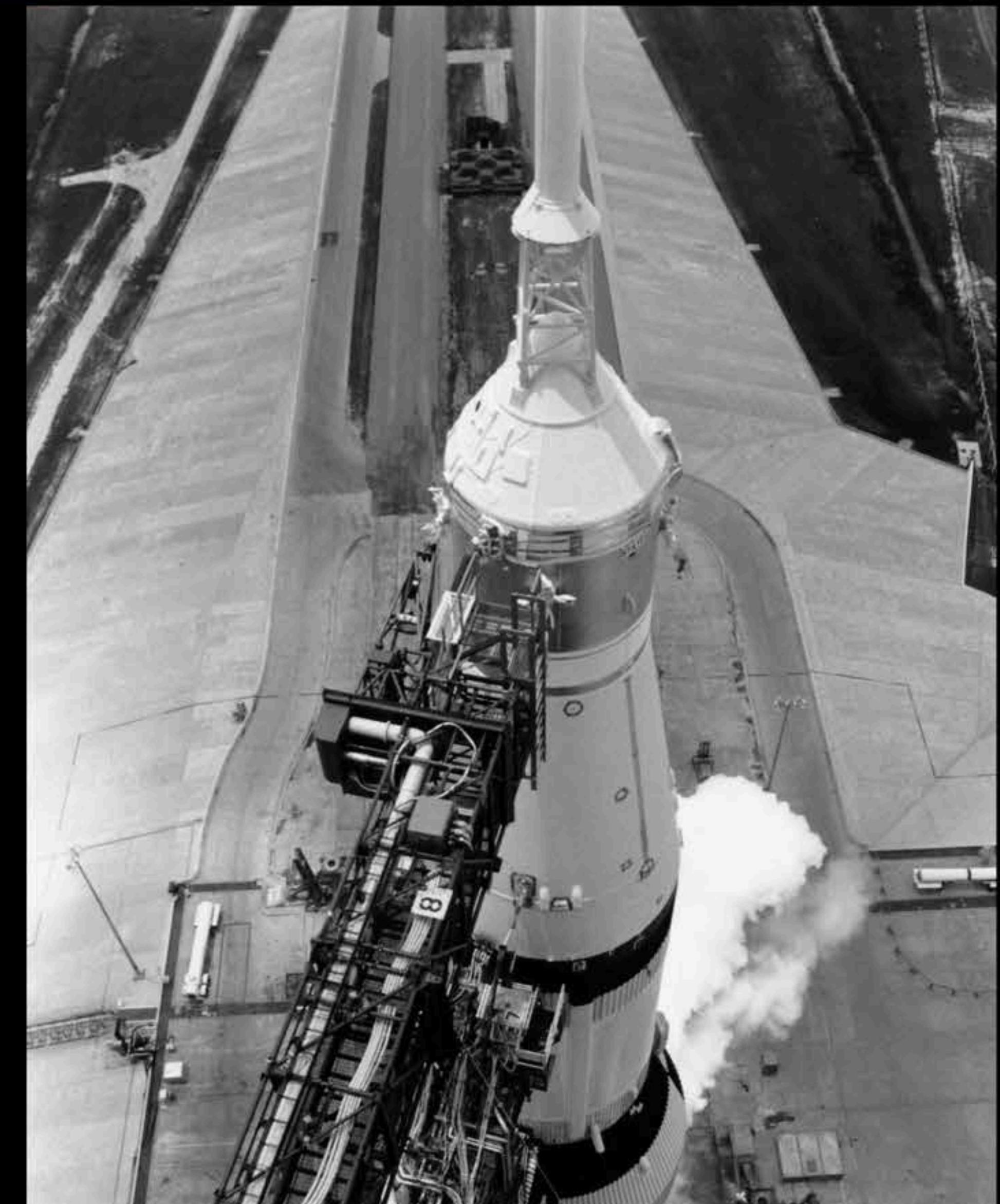
Mission Control Channels

- FOD
- MSN DIR
- FLIGHT
- FLIGHT-L
- FLIGHT-R
- CAPCOM
- CAPCOM-R
- BOOSTER
- BOOSTER-C
- BOOSTER-R
- RETRO
- FIDO
- GUIDO
- GUIDO-R
- SURGEON
- SURGEON-R
- ECCOM
- GNC
- TELCOM
- CONTROL
- INCO
- OPS & PRO
- FAO
- ASST FD
- NETWORK
- COMM TECH
- COMM CTRL
- TRACK
- TRACK-R
- RECOVERY
- RCVY ASST
- RCVY STUS
- CONF LOOP
- GOSS 2
- EASEP
- MOCR DYN

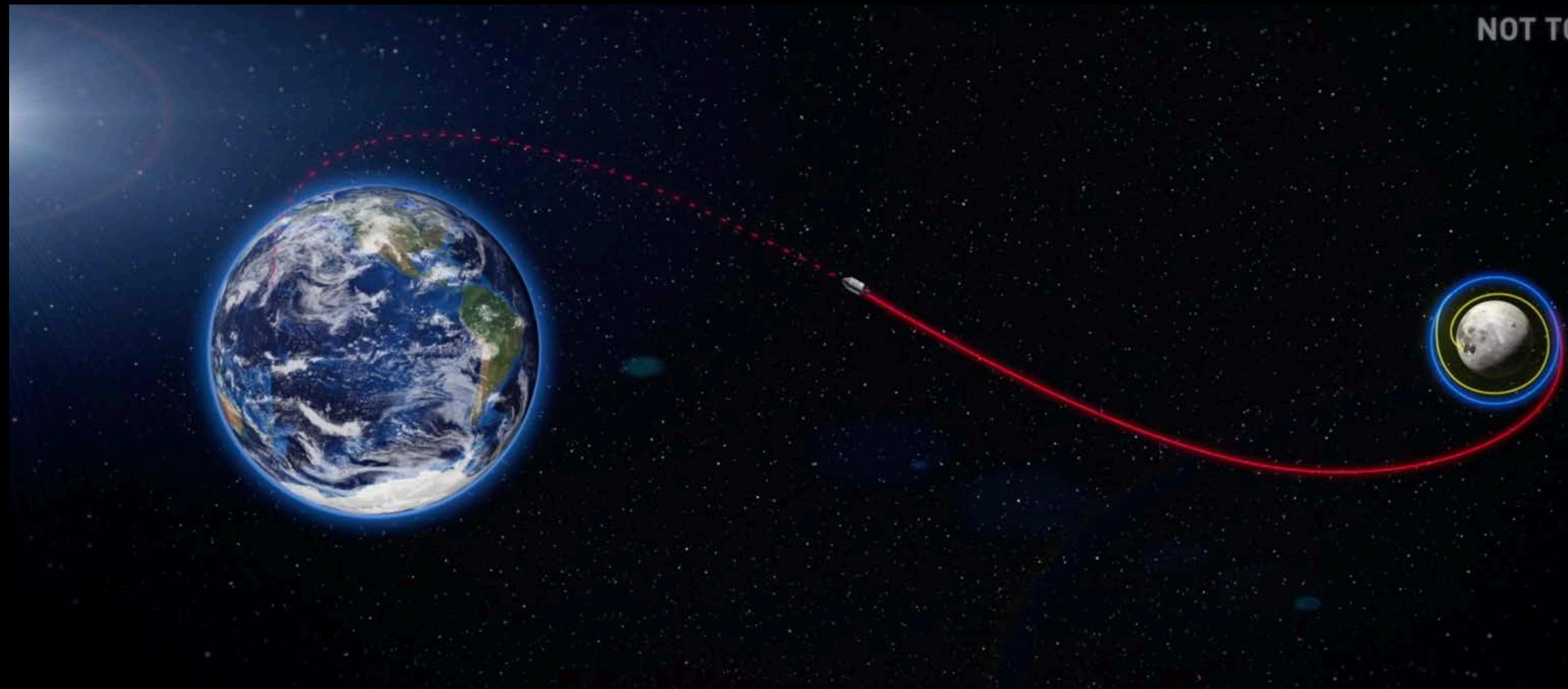
PHOTOGRAPHY

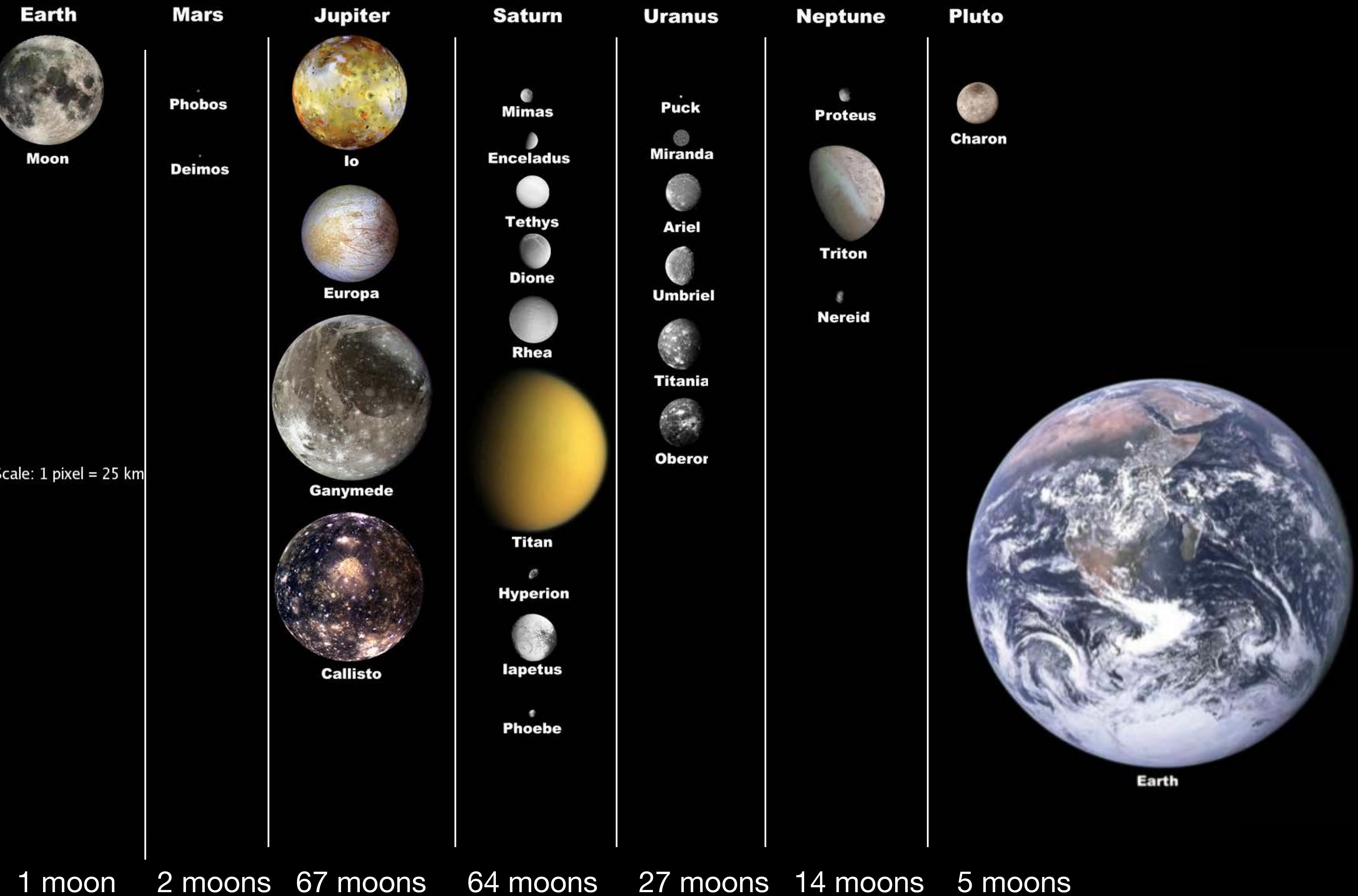
MISSION CONTROL AUDIO

ASTROMATERIAL SAMPLES



NOT TO SCALE







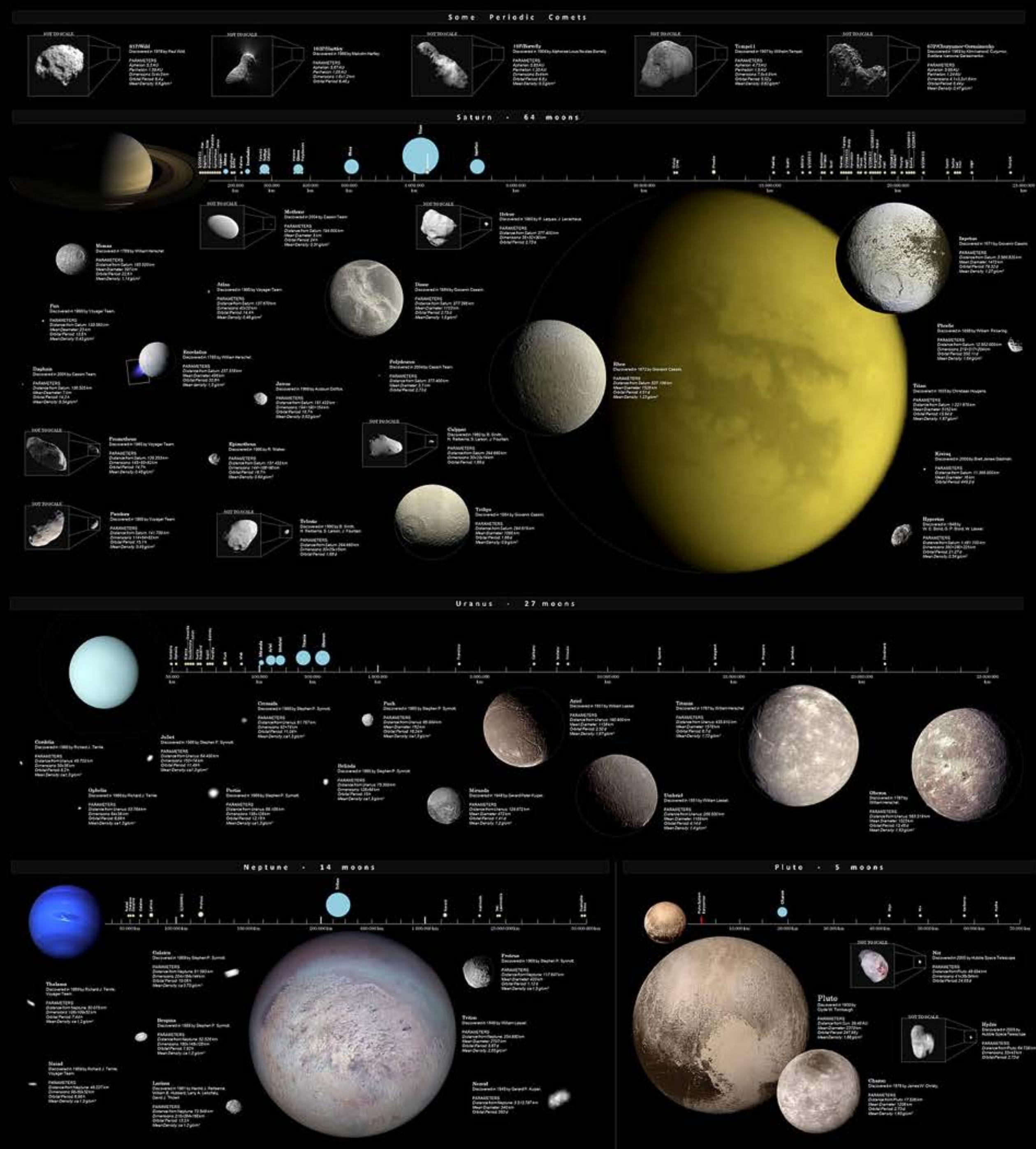
Non-Planet of the Solar System to scale

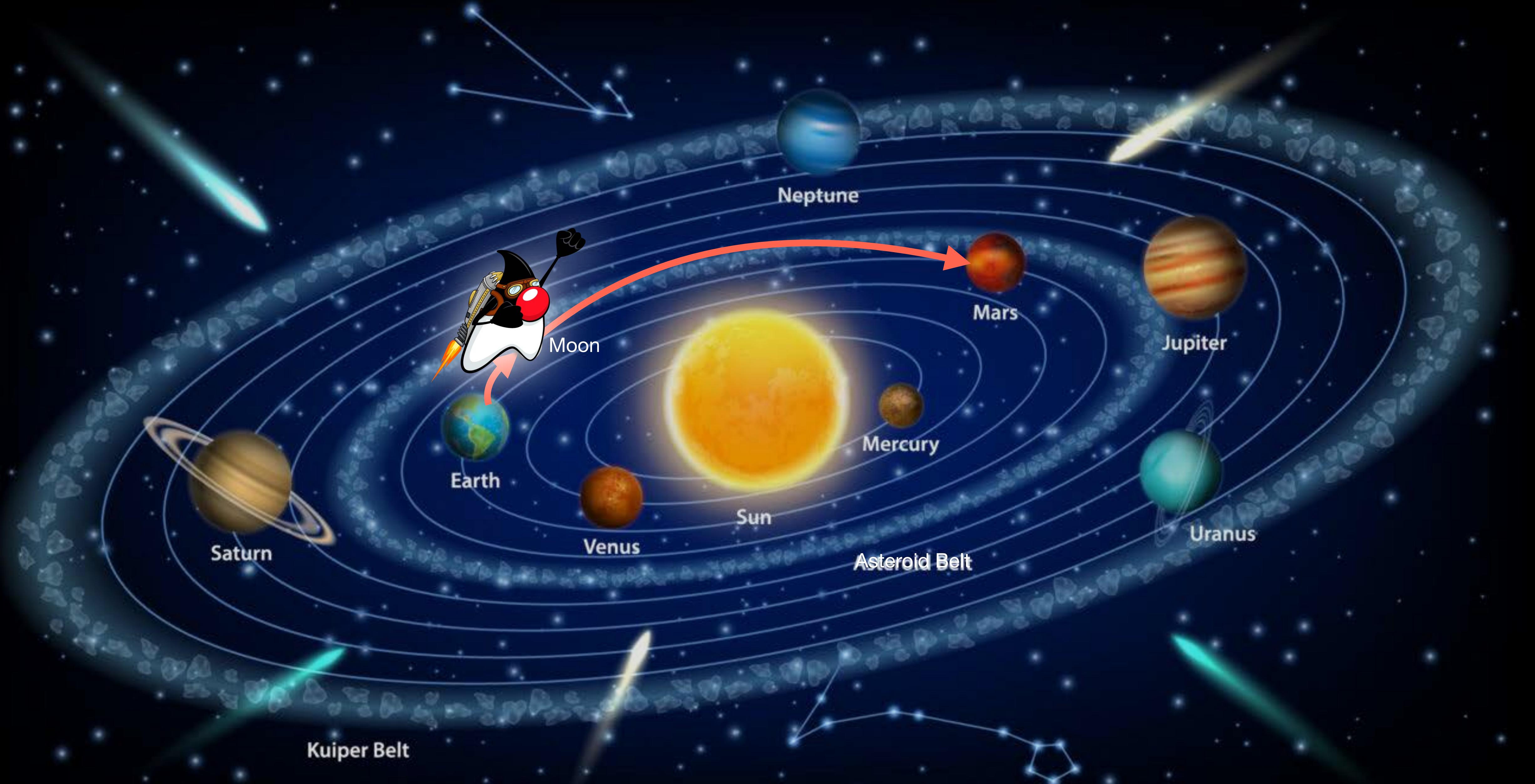
Dwarf Planets (Ceres & Pluto) – Moons of Planets and Dwarf Planets – Asteroids – Comets

Images from Missions:

Voyager 1 – 2, Hubble Space Telescope, Mars Reconnaissance Orbiter, Deep Impact-EPOXI, Stardust, Galileo, Near-Shoemaker, Cassini, Rosetta, Dawn, New Horizons

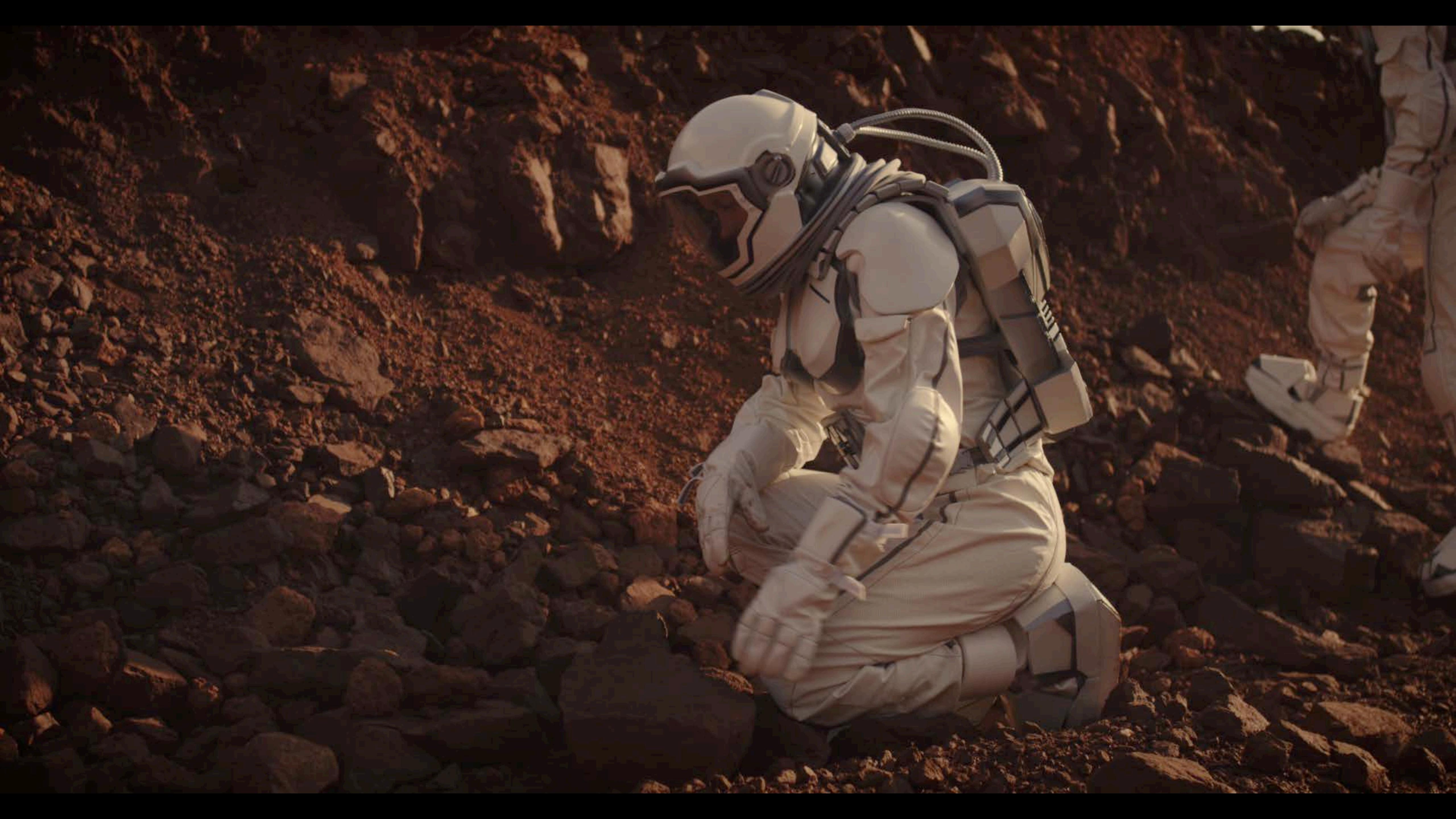
THE REPRESENTATION BETWEEN MOONS & PLANET ON DISTANCE LINE AND PLANET & PLANET OF DISTANCE LINE IS NOT TO SCALE





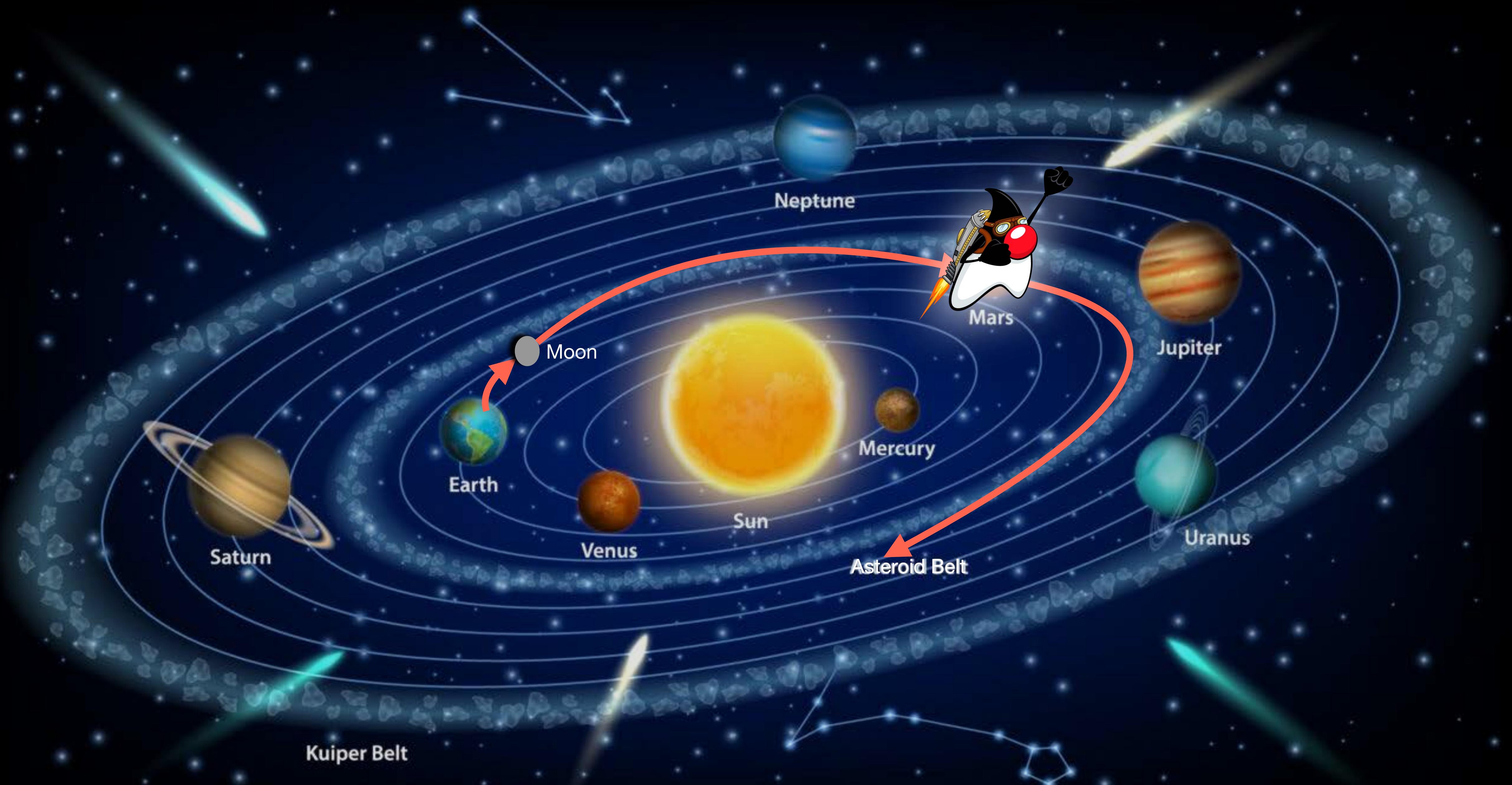






NASA API:

MARS ROVER





NASA API:

ASTEROIDS

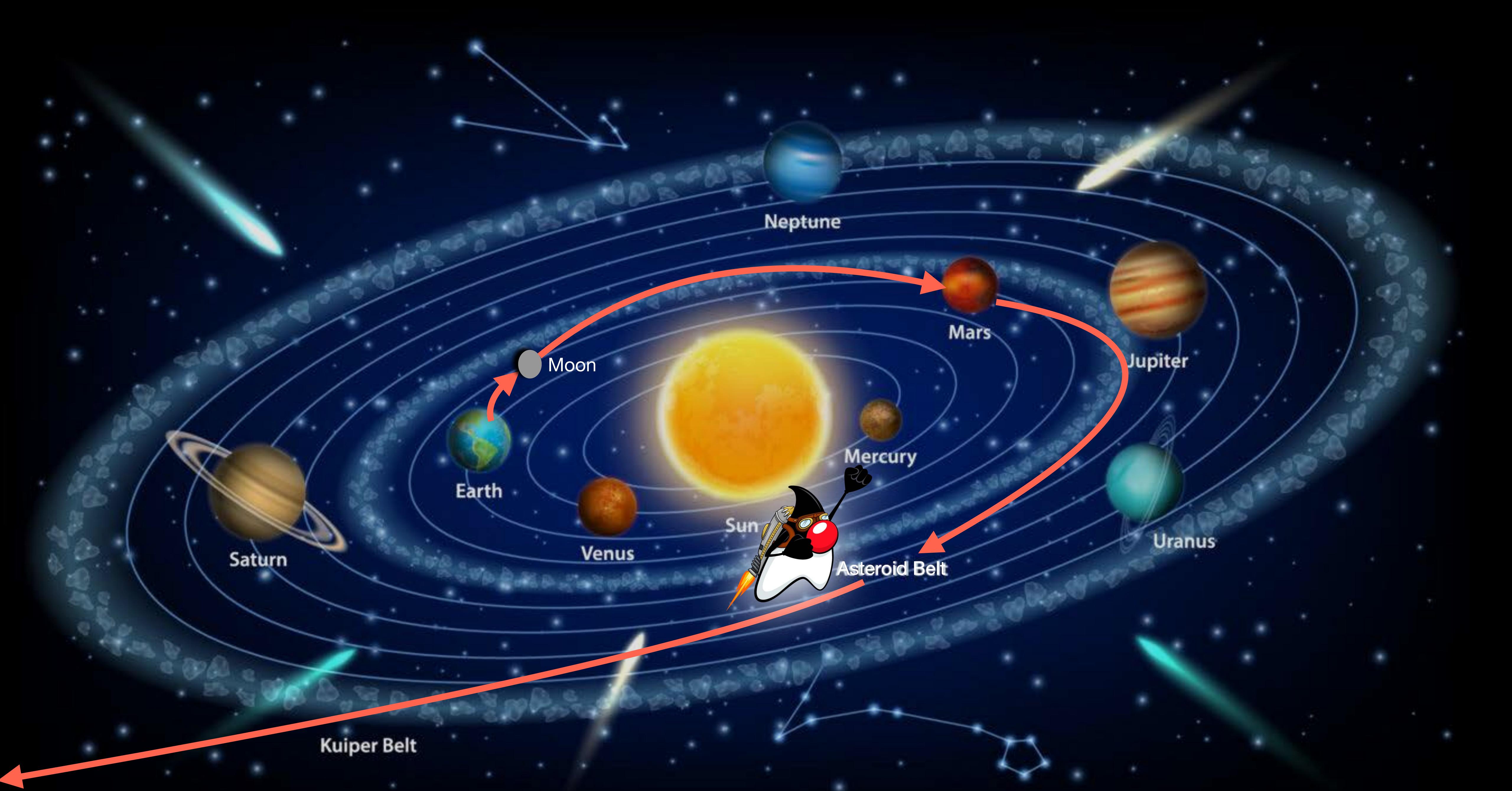
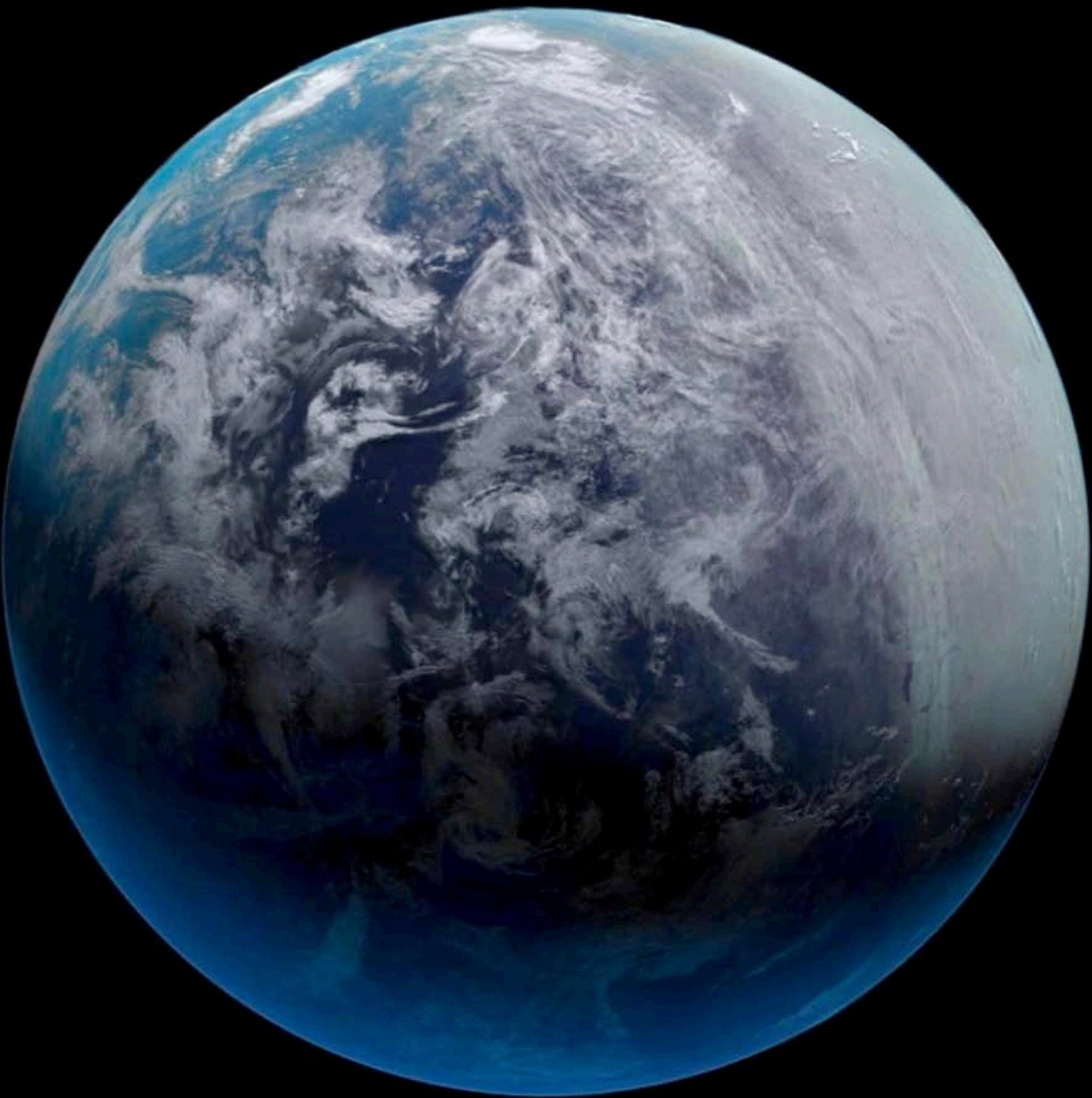




Illustration: NASA, CSA, ESA, J. Olmsted (STScI), Science: N. Madhusudhan (Cambridge University)

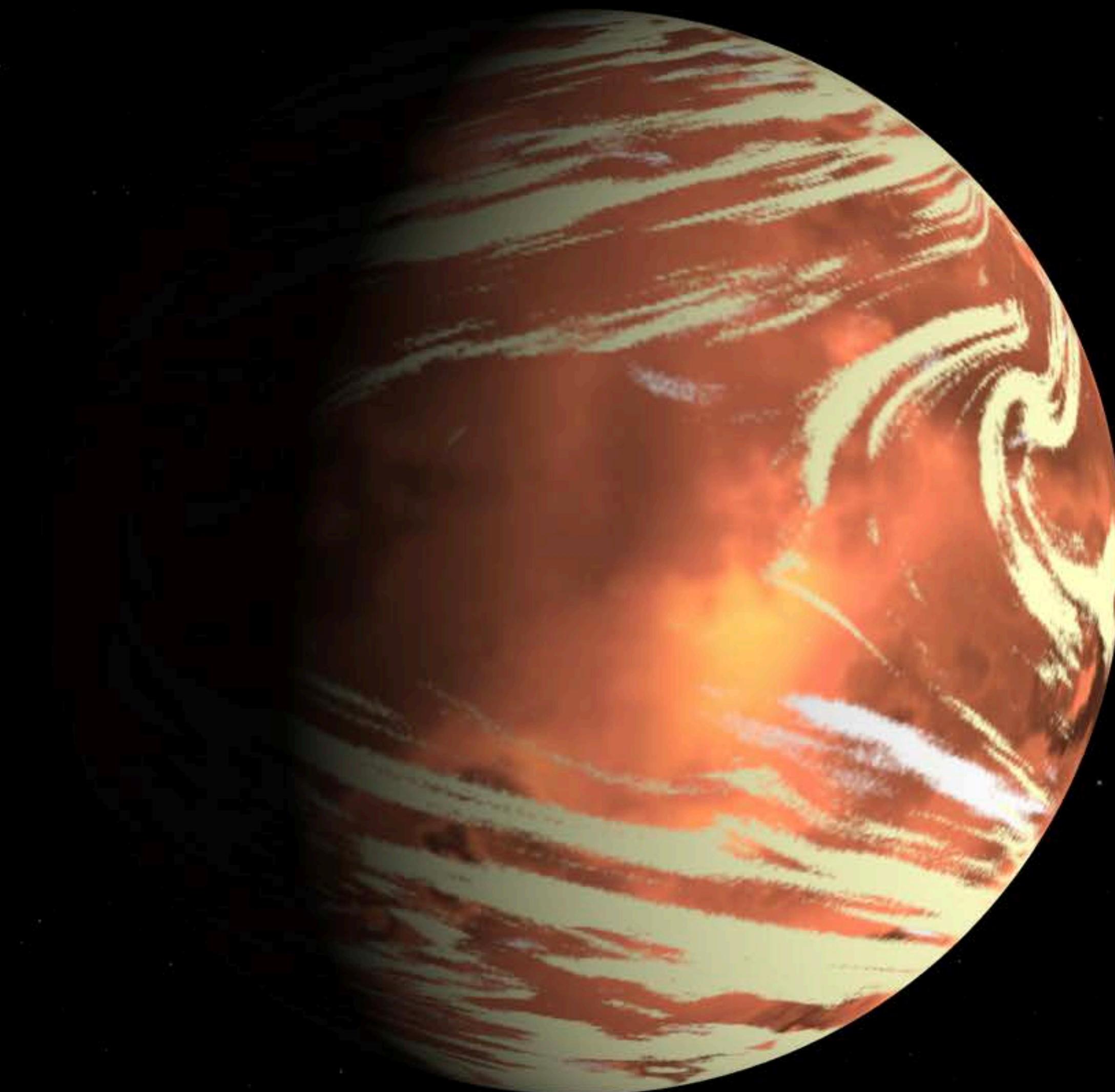
K2-18 B

EARTH



LET'S FIND K2-18B

WITH NASA?

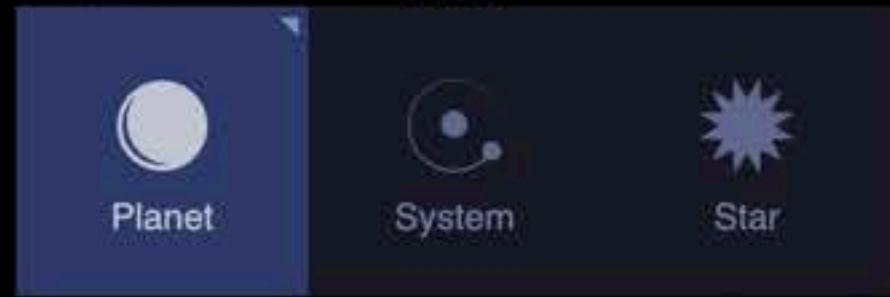


You are
124 light-years
from Earth

K2-18 b

A potentially rocky world, larger than Earth

VIEW



Planet

System

Star

COMPARE

IS THERE LIFE?

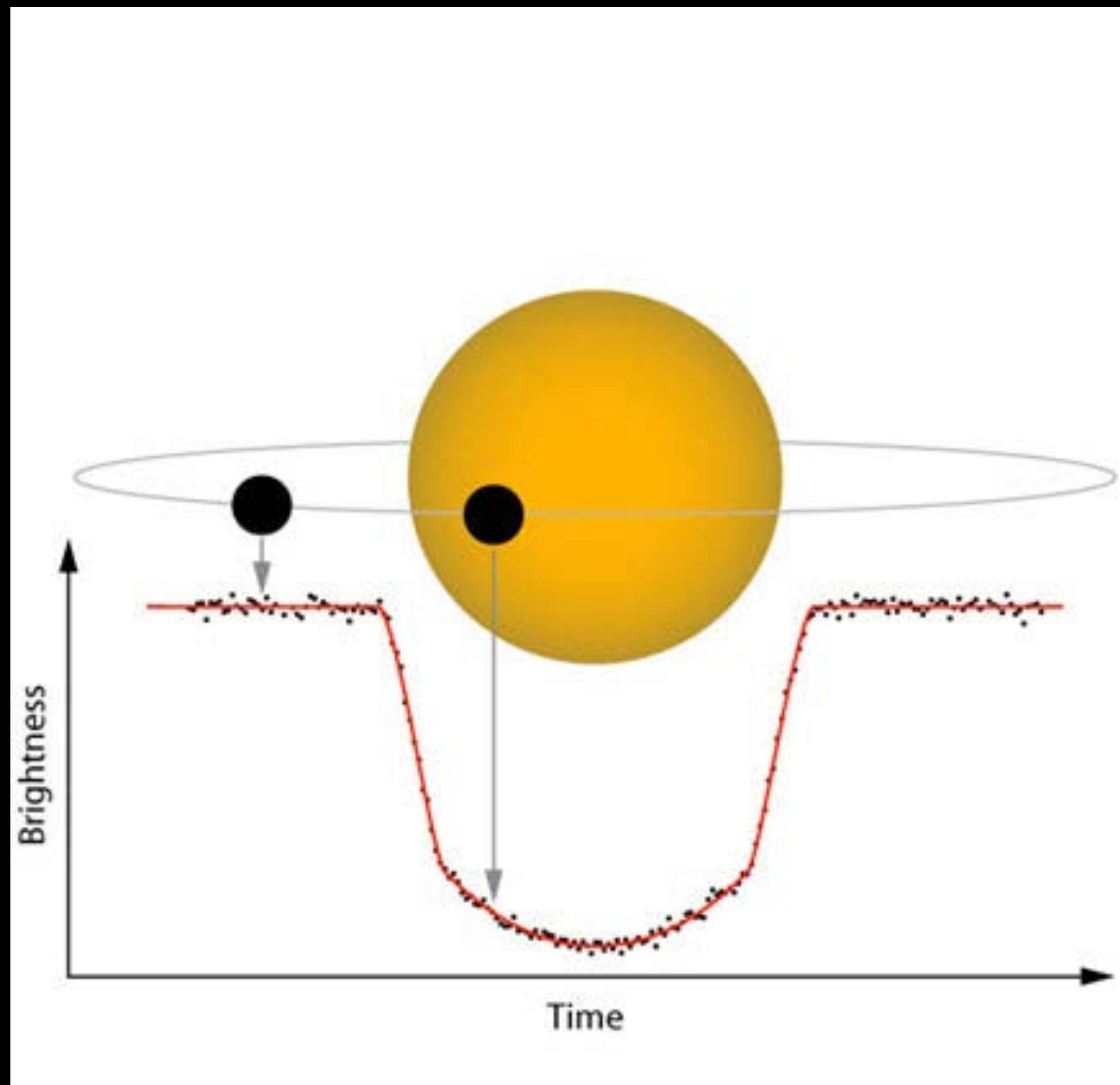




YES
(WE THINK)

On Earth, dimethyl sulphide (DMDS) is “only produced by life,” primarily by marine phytoplankton.





NASA API:

EXOPLANET EXPLORATION

([LINK](#))

BUT.....

(THERE'S ALWAYS A BUT)



SO WE NEED TO BE
CAREFUL

LET'S MEASURE
OUR...

(SPRING BOOT) APPLICATION

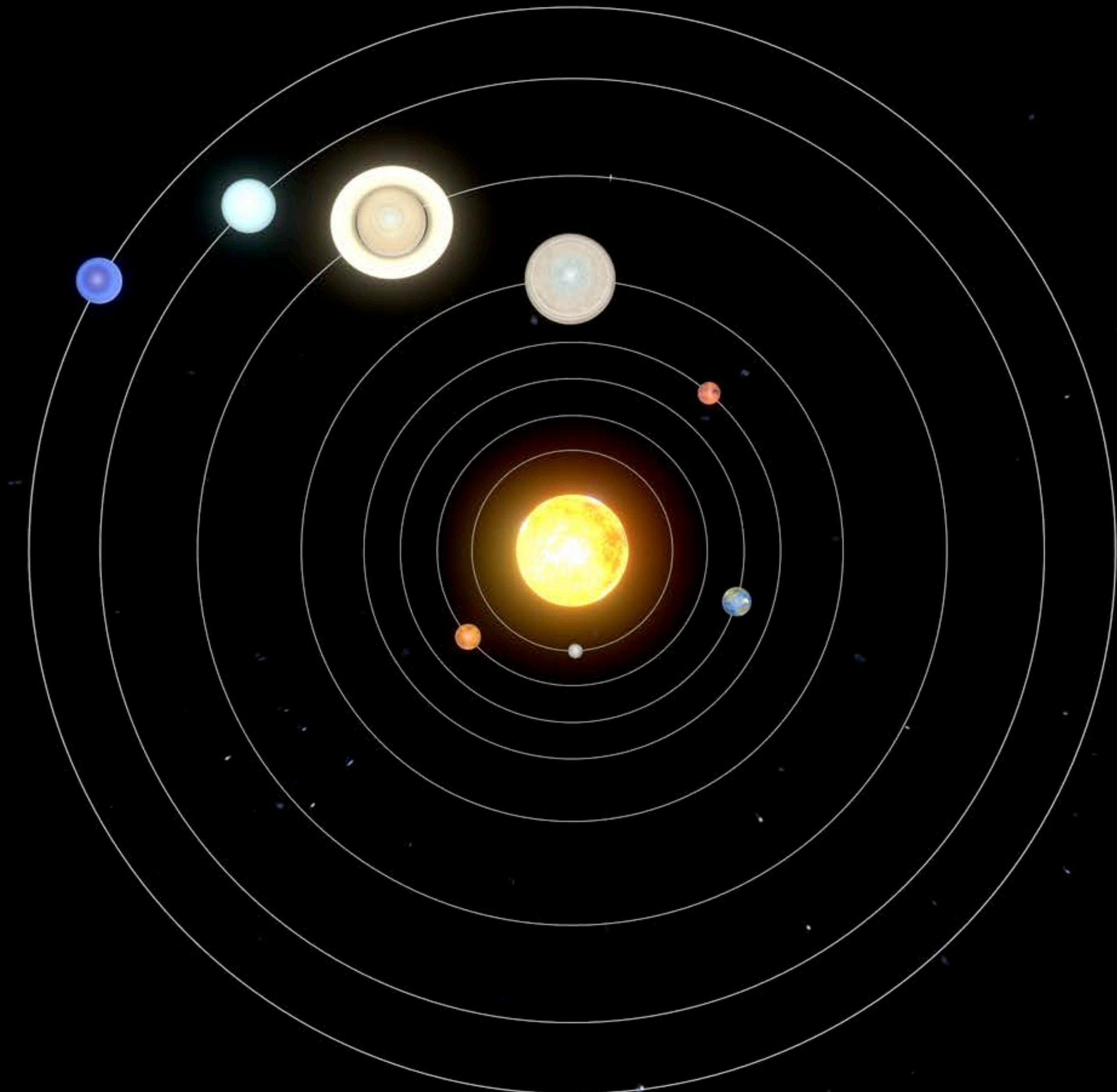


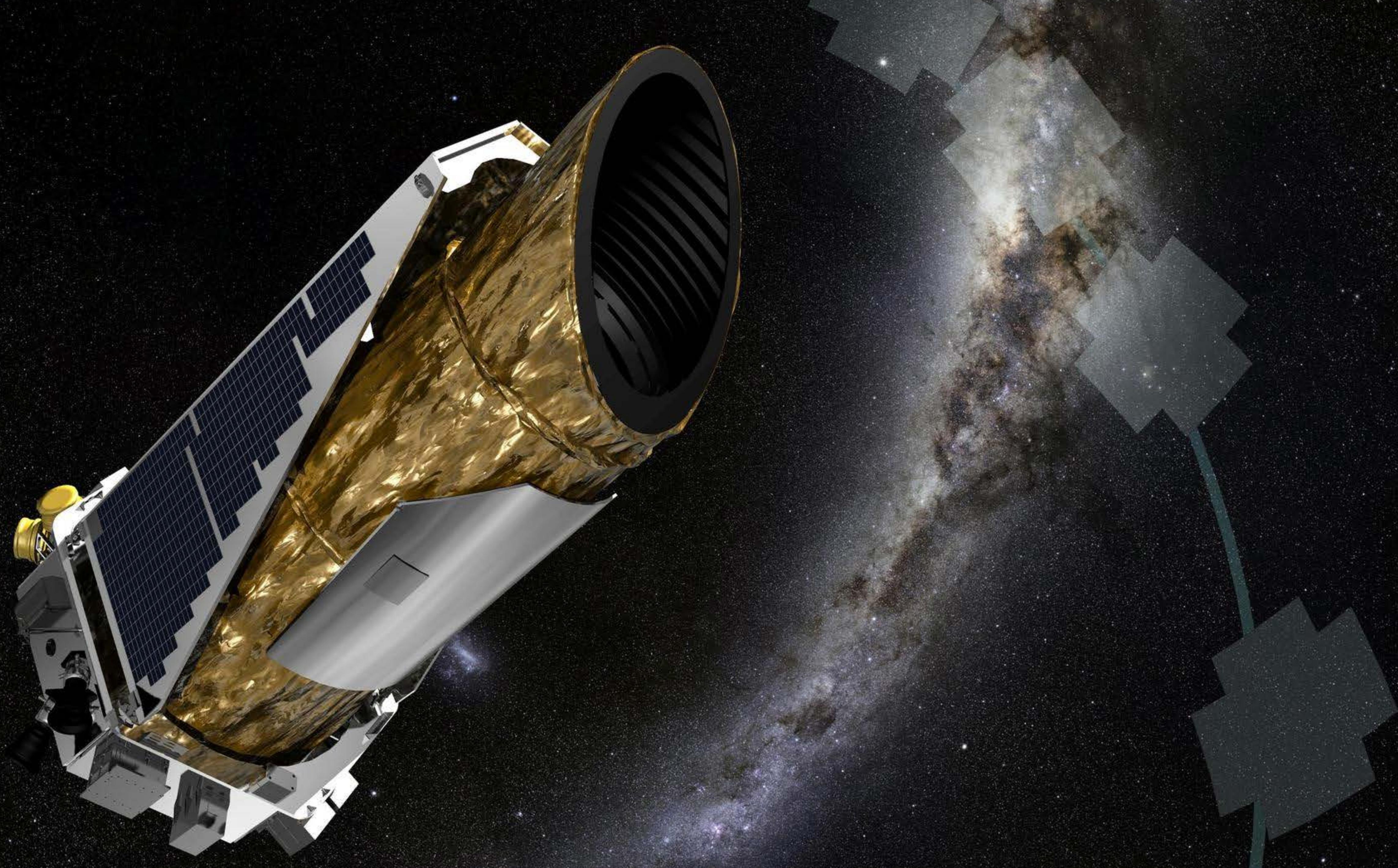
WITH KEPLER





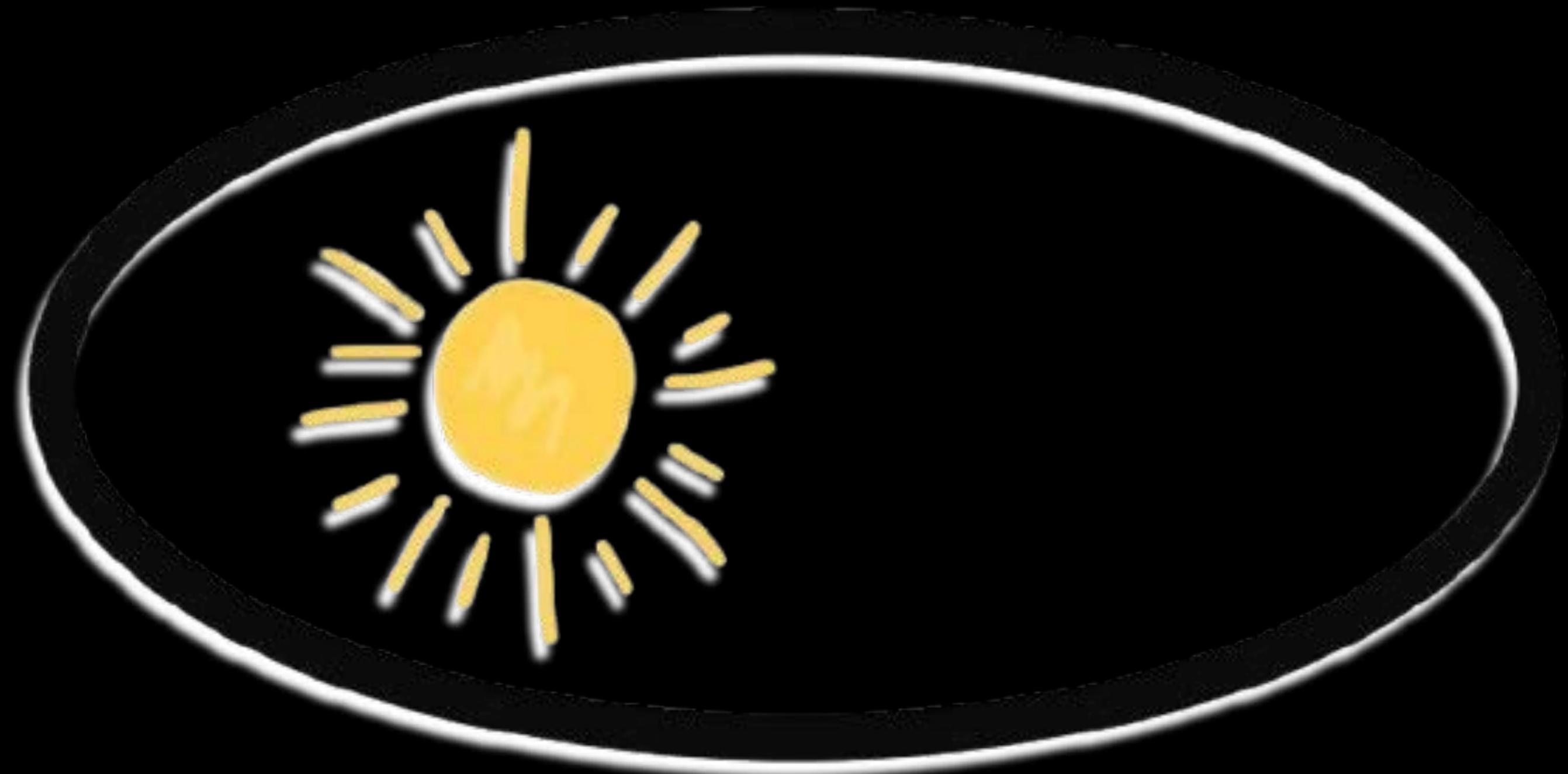
JOHANNES KEPLER



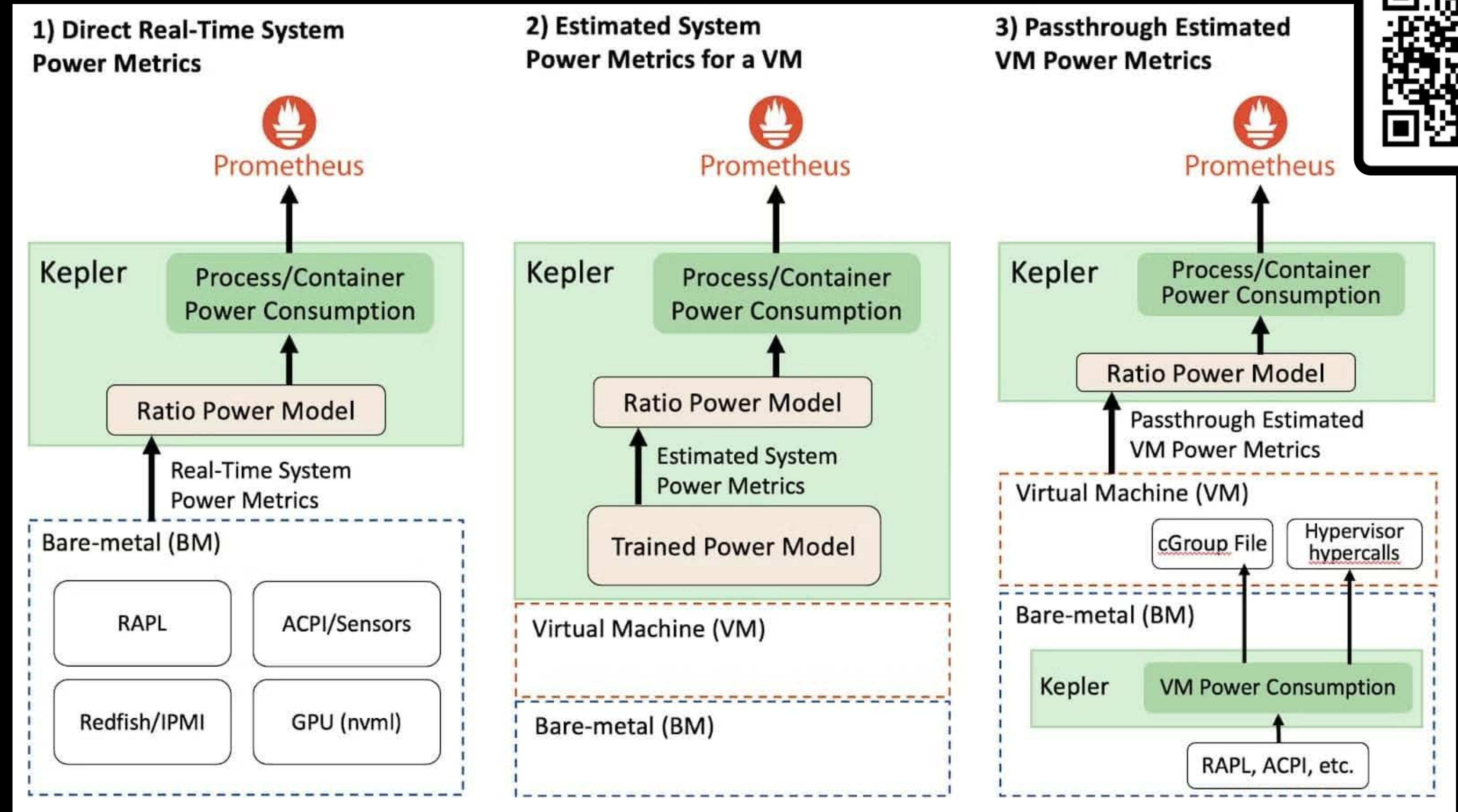


AND THEN

MONITOR YOUR APPLICATIONS HEALTH



K E P L E R

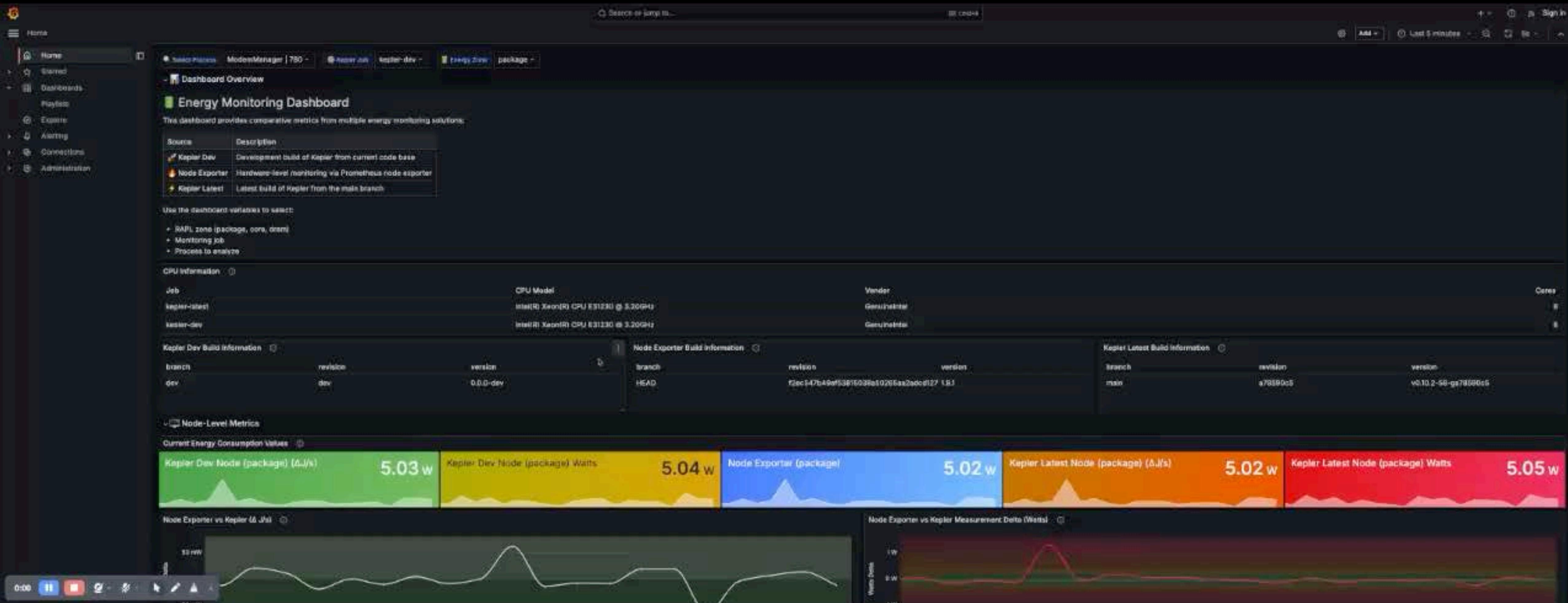


LET'S RELEASE OUR
APPLICATION TO PRODUCTION

SDKMAN!



LIVE
PRODUCTION DEMO :)



CAN I BE 'GREENER'?

THINK ABOUT YOUR OWN WORK

BUILDING YOUR
PROJECT



USING FRAMEWORKS

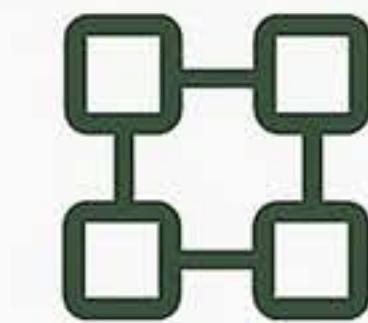




Carbon Aware
Jobs



Ahead of time
Recurring Jobs



Multi-Cluster
Dashboard



K8s Autoscaling

JobRunr v8



Reduced
database load



Kotlin Serialisation
support



Dashboard
Notification Center



SmartQueue

org.jobrunner.stubs.TestService.doWork(4)

```
import org.jobrunner.stubs.TestService;  
  
TestService.doWork(4);
```

⚡ This job is scheduled Carbon Aware at Mon Jul 07 2025 between 09:39:39 and 17:39:39 (GMT+0200) to minimize carbon impact.

History ↑



⌚ Job Scheduled - At the best moment to minimize carbon impact in Belgium

Mon Jul 07 2025 15:00:00 GMT+0200 ▾

CODING?

USE PMD WITH RULESETS

PMD RULESETS JPINPOINT RULES



“to code better software together: better software which is faster, uses less resources, has a smaller ecological footprint, is more stable, more confidential, with less effort and lower cost. “

KEY TAKEAWAYS

- > Think about greener your work (application)
- > Monitor (with Kepler)
- > Simplify your work (with SDKMan / JReleaser)
- > Have fun (with tooling)

WHY?

TO BE MORE PRODUCTIVE
AND HELP OUR NEXT GENERATION





THANK YOU FOR LISTENING

PLEASE BE KIND WITH VOTING :)

