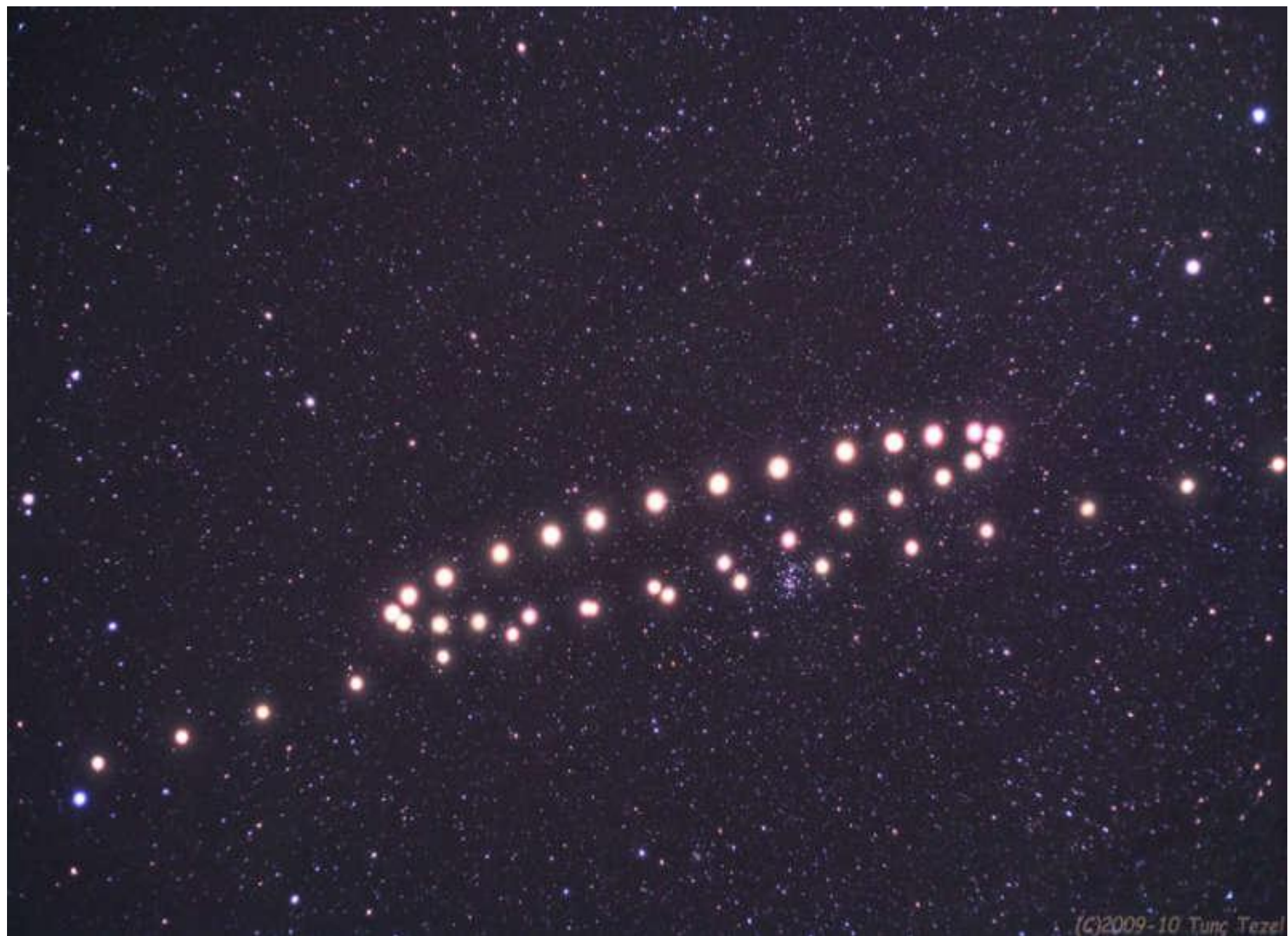
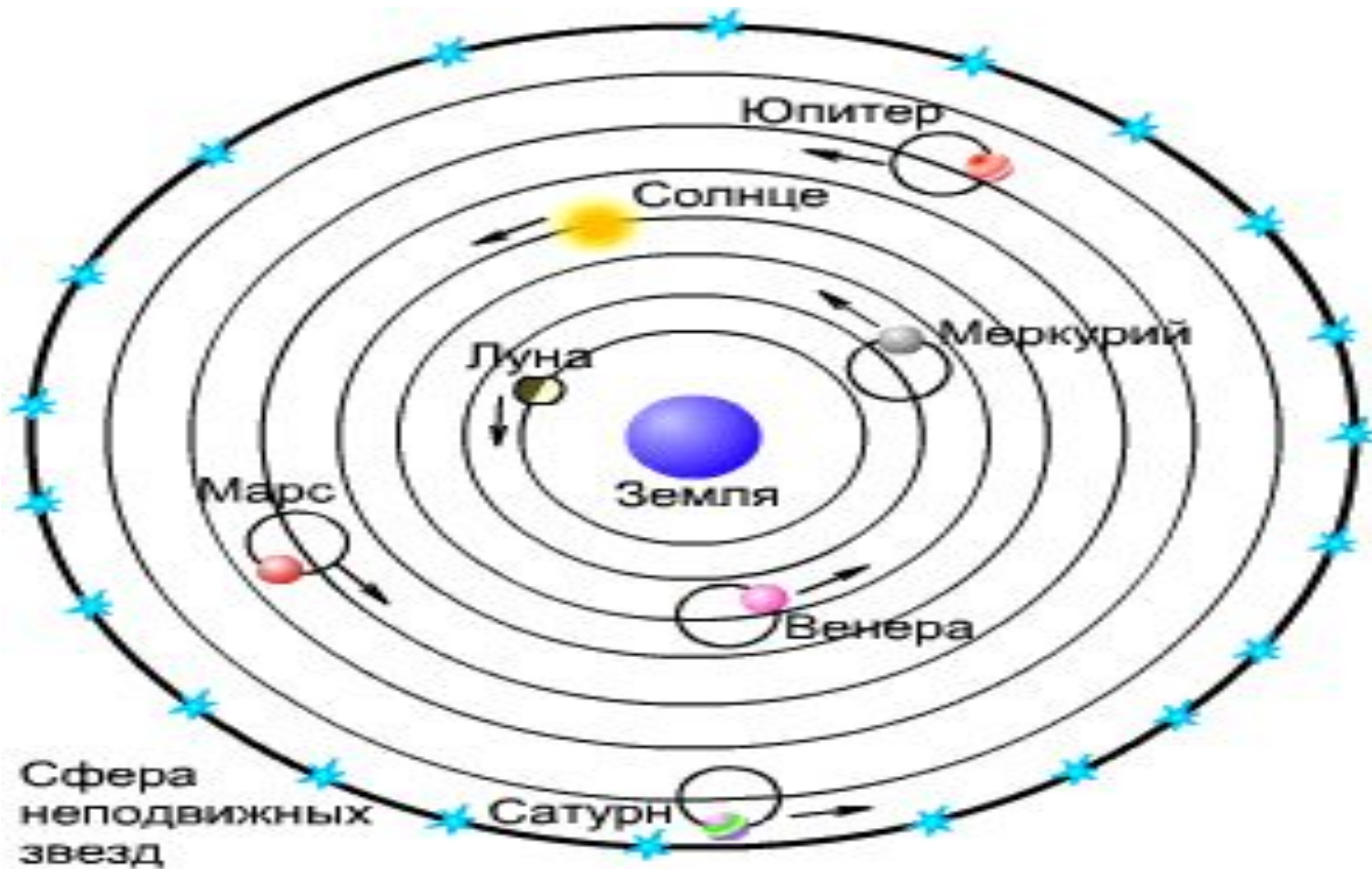


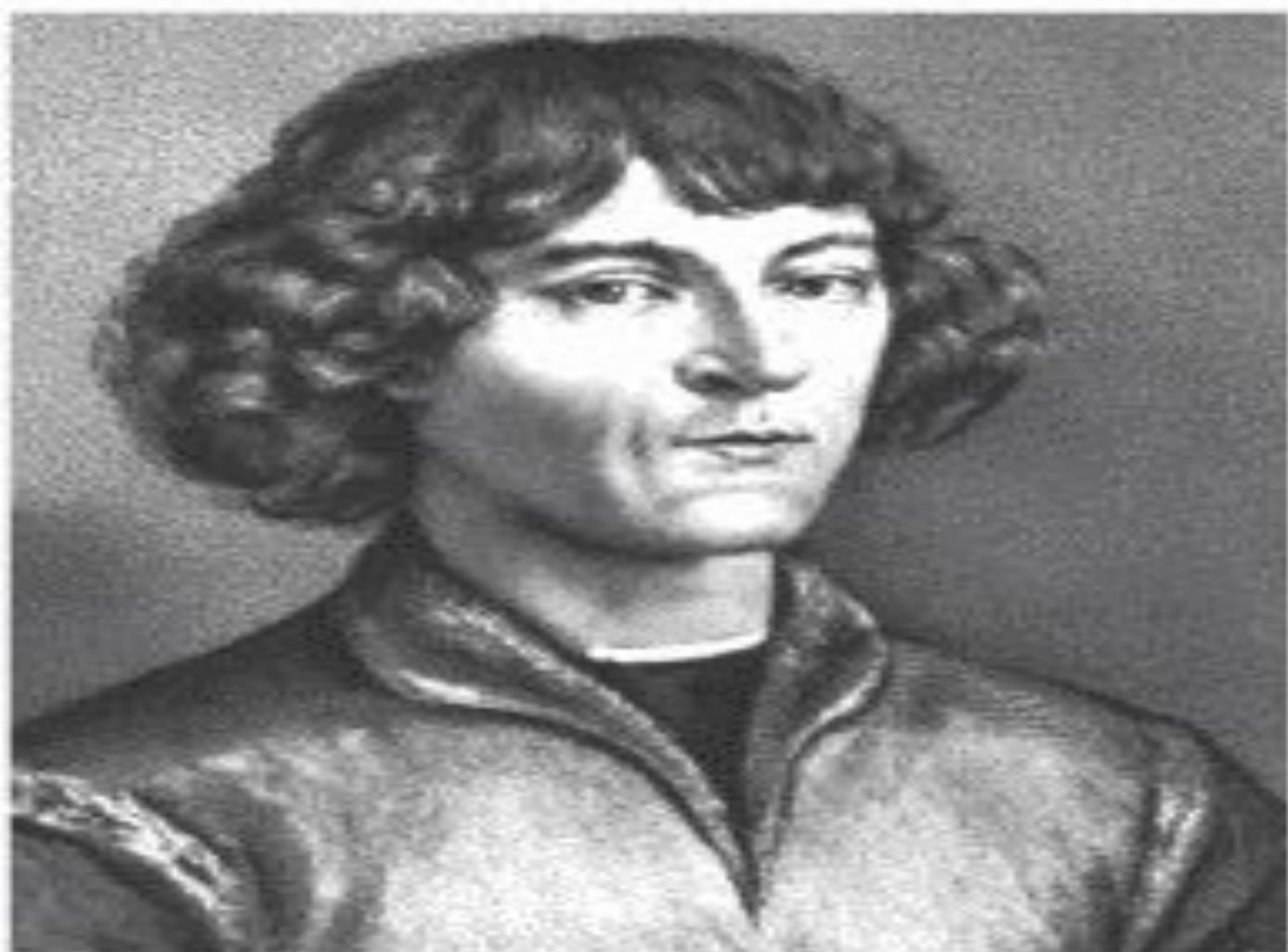
**Планеты в Солнечной  
Системе и за её пределами.  
Внеземная жизнь.**



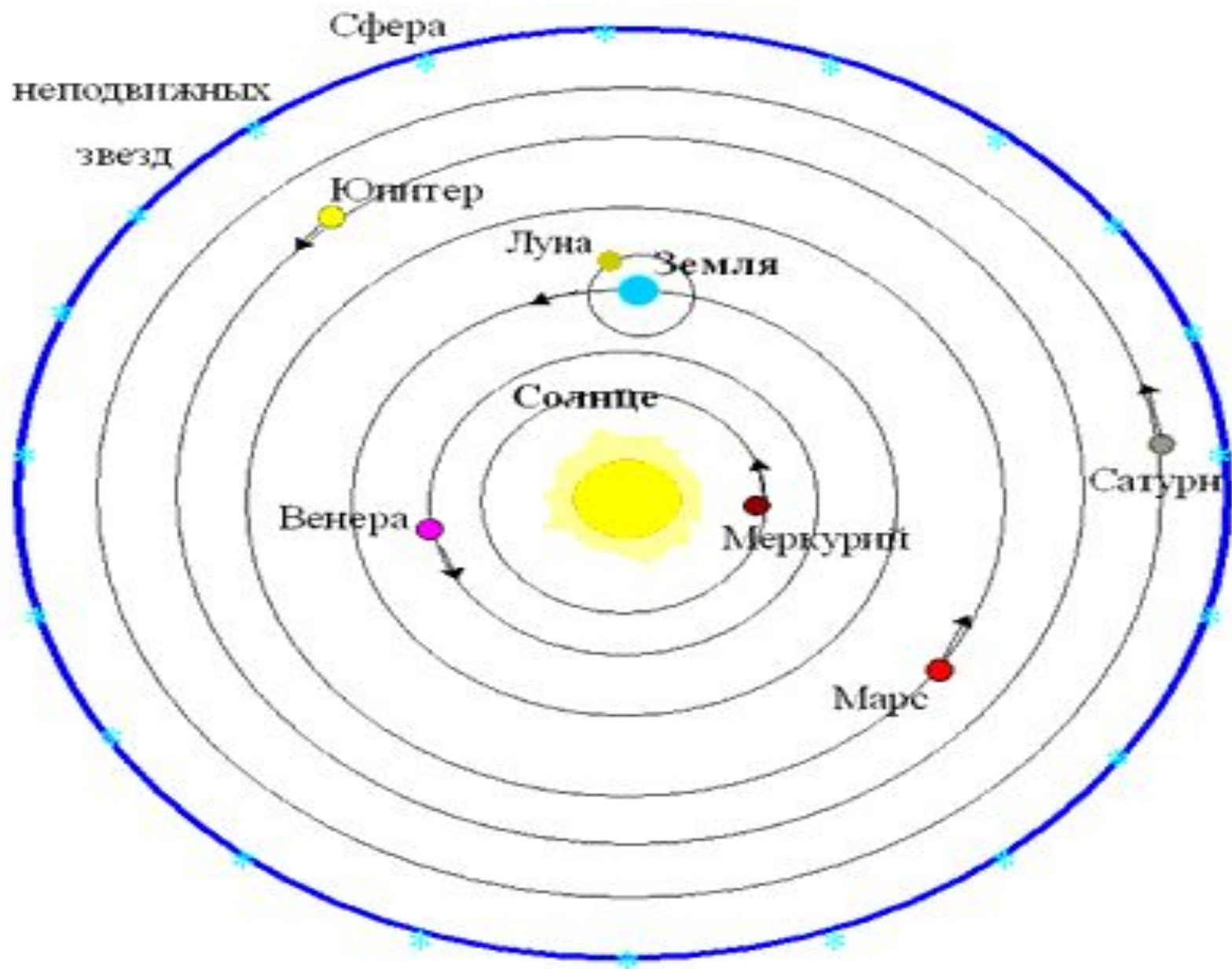


# Геоцентрическая система





Николай Коперник  
(1473–1543)



# Галилео Галилей (1564-1642)







# СТРОЕНИЕ СОЛНЕЧНОЙ СИСТЕМЫ



Нептун

Уран

Сатурн

Солнце

Марс

Венера

Меркурий

Комета

Пояс астероидов

Земля

Луна

Юпитер

Строение Солнечной системы  
Иллюстрация подготовлена редакцией  
1081 025-010-001 2  
Издательство «А. А. Вольфсон»  
Удмуртский институт наук М. А. Ковалева  
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© ООО «Издательство АИРИС», 2004  
190000, Москва, ул. Мельникова, 50  
Тел.: (495) 785-5540, www.iris.ru

АИРИС ДА ПРЕСС

**Солнце**

**Плутон**

**Нептун**

**Уран**

**Сатурн**

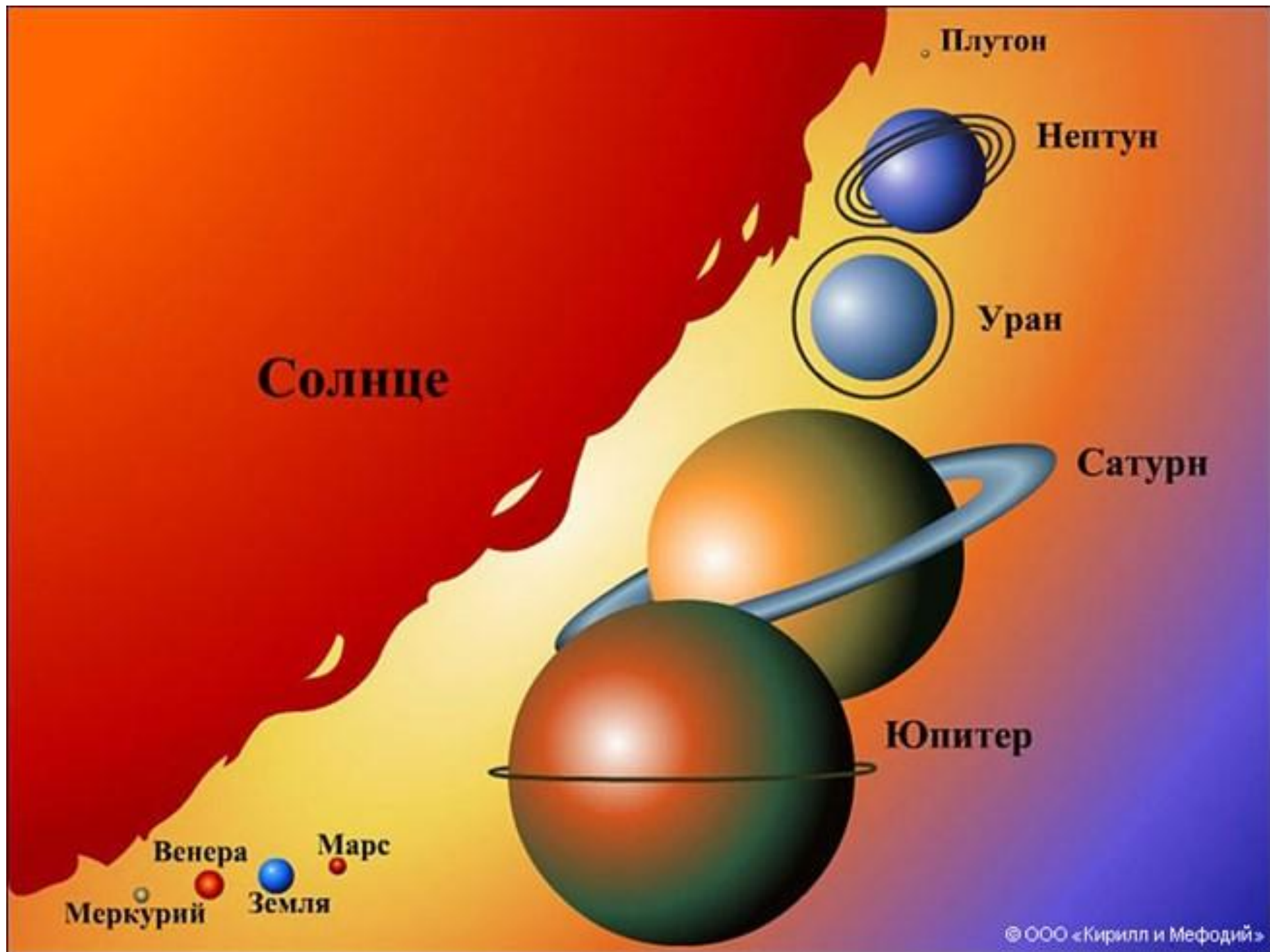
**Юпитер**

**Венера**

**Марс**

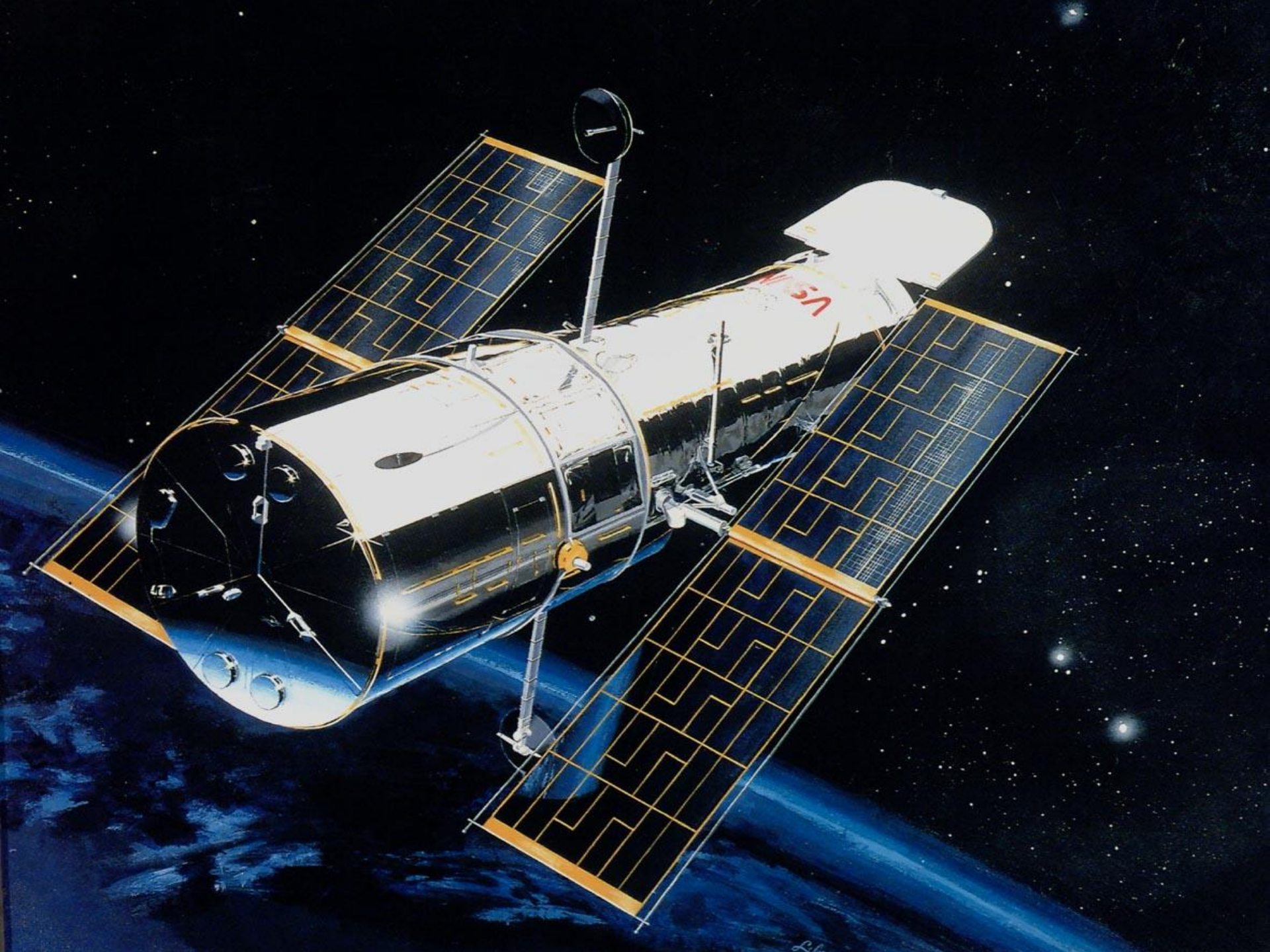
**Меркурий**

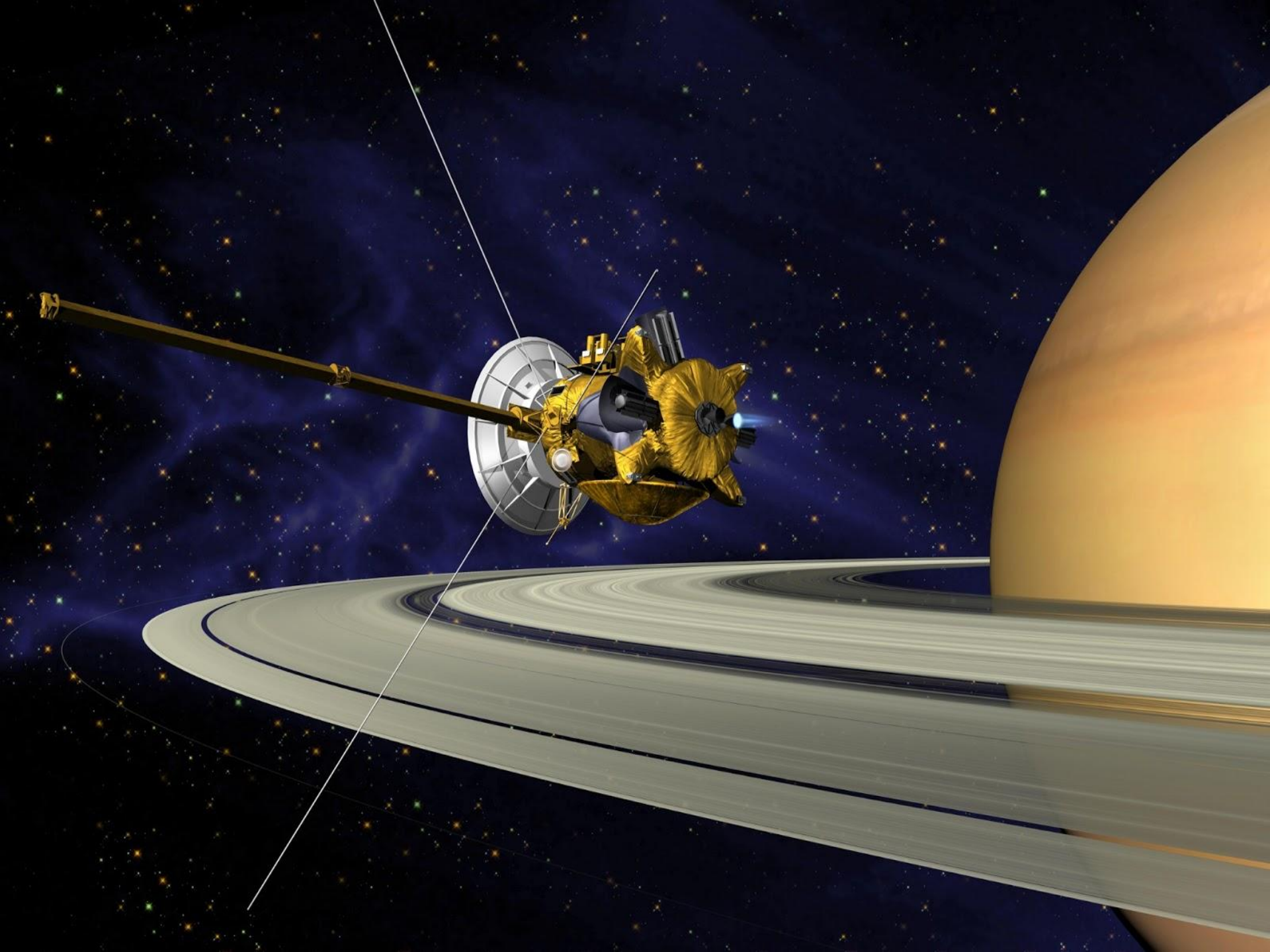
**Земля**









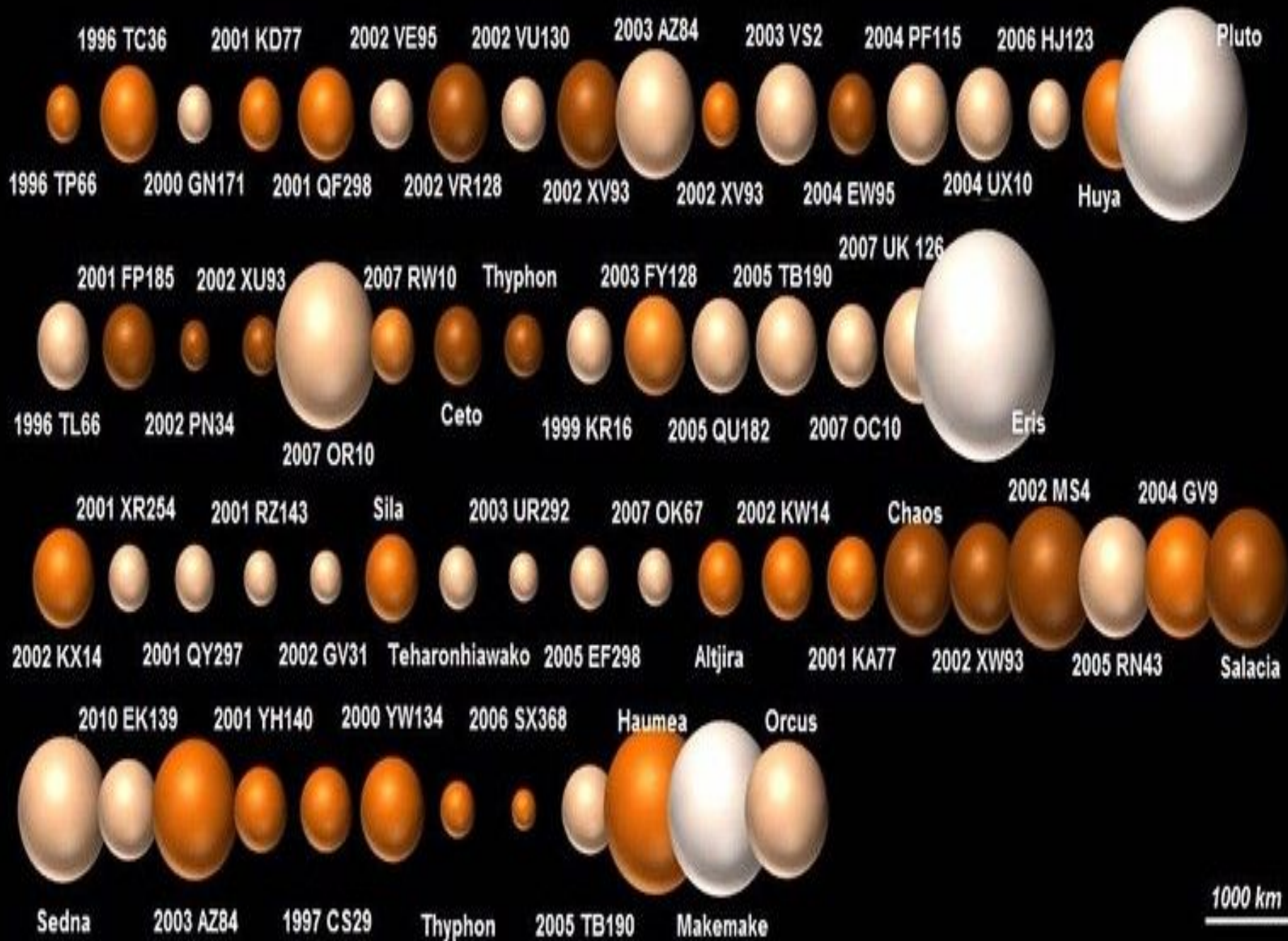




# Середина 20 века









**Planet X**



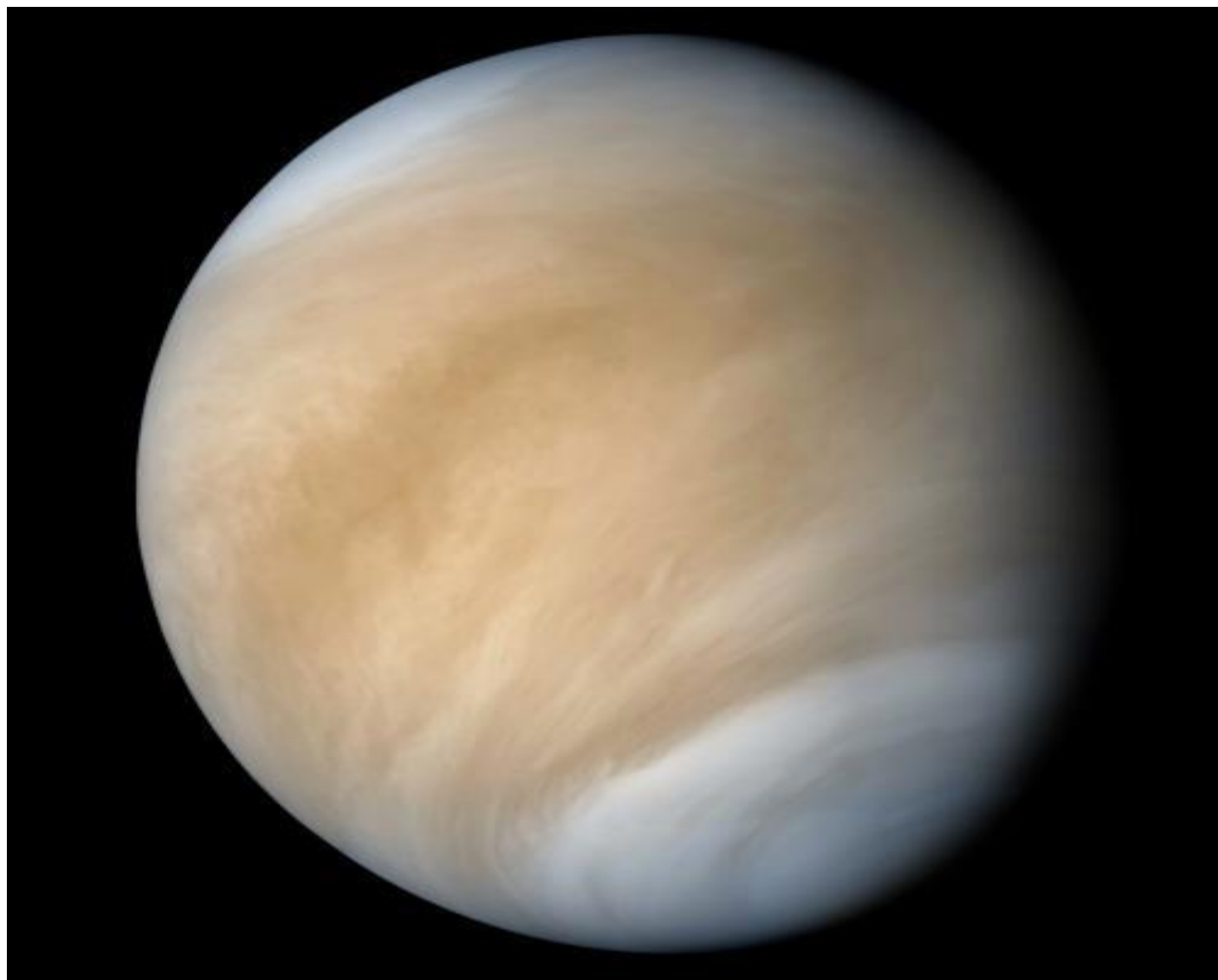
**Earth**

# Луна





# Венера

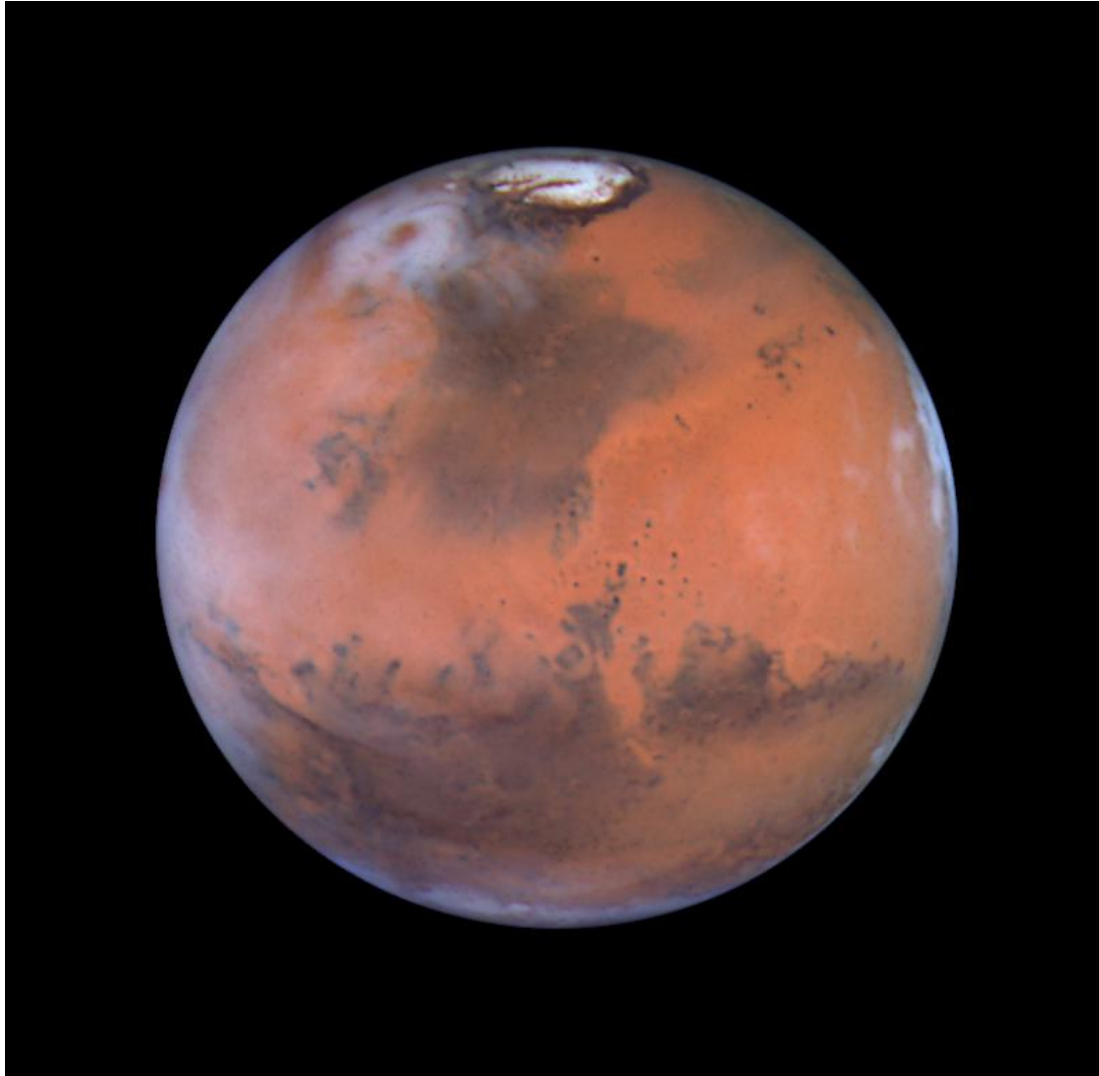




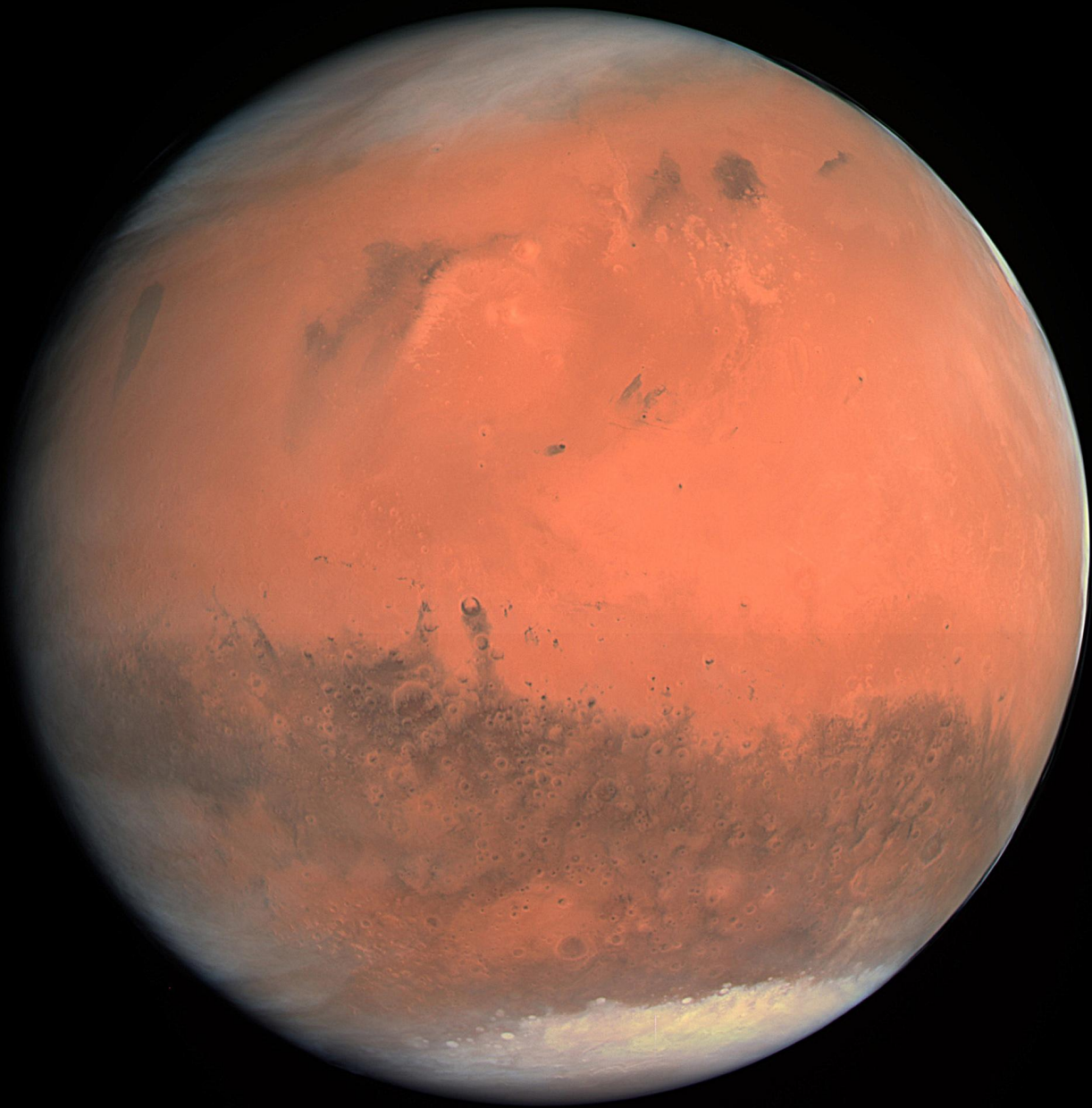
Don P. Mitchell

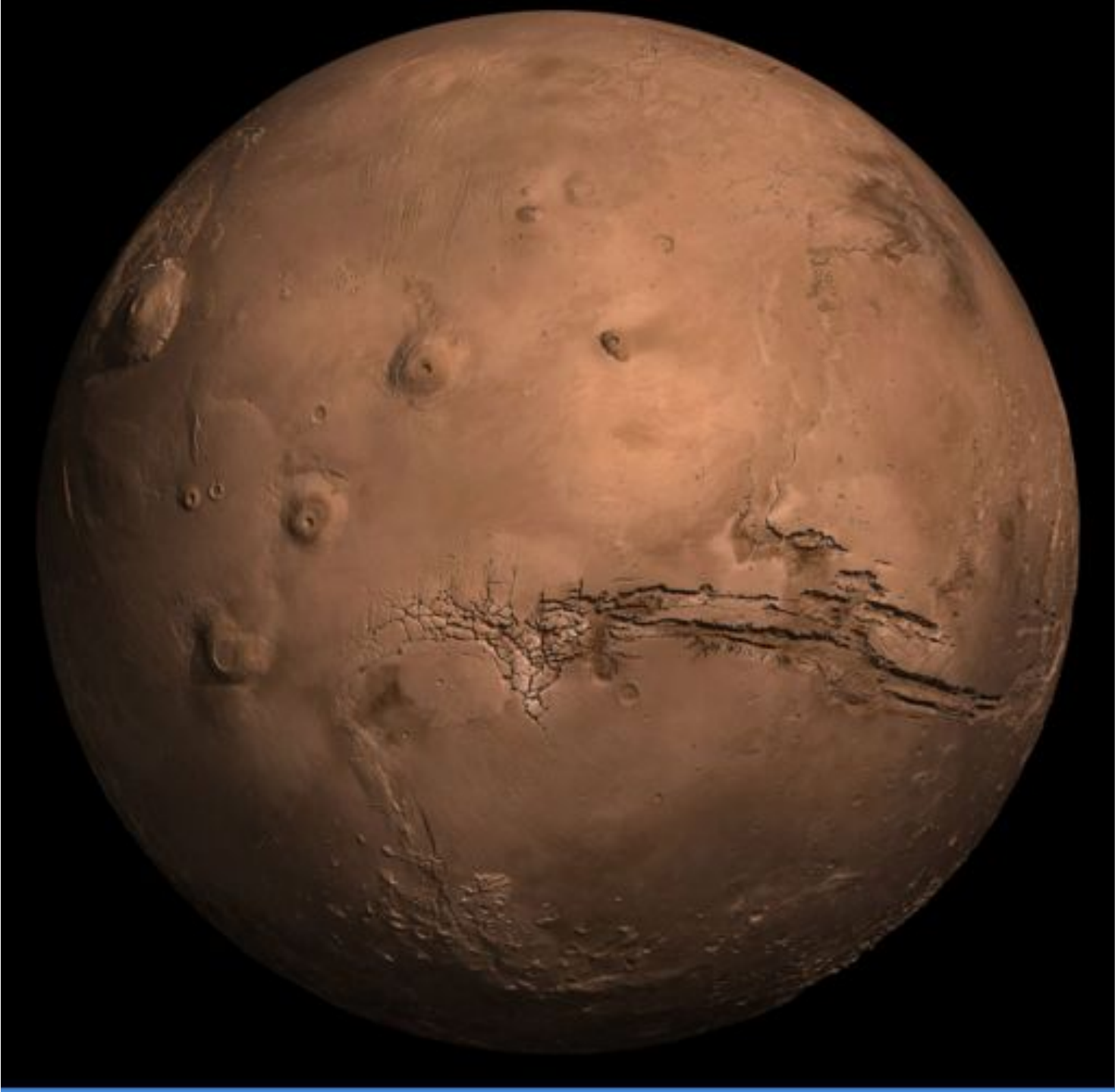


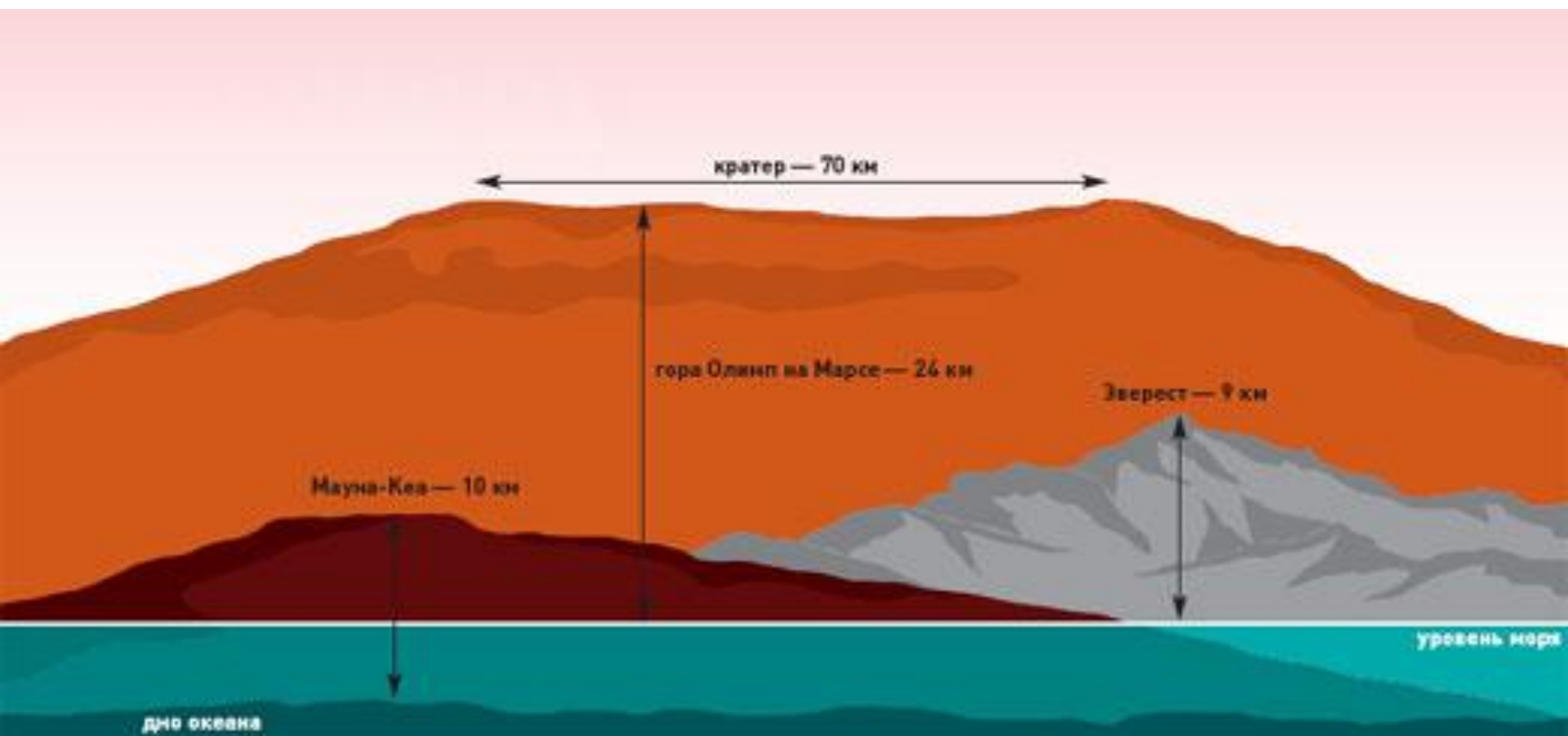
# Mapc

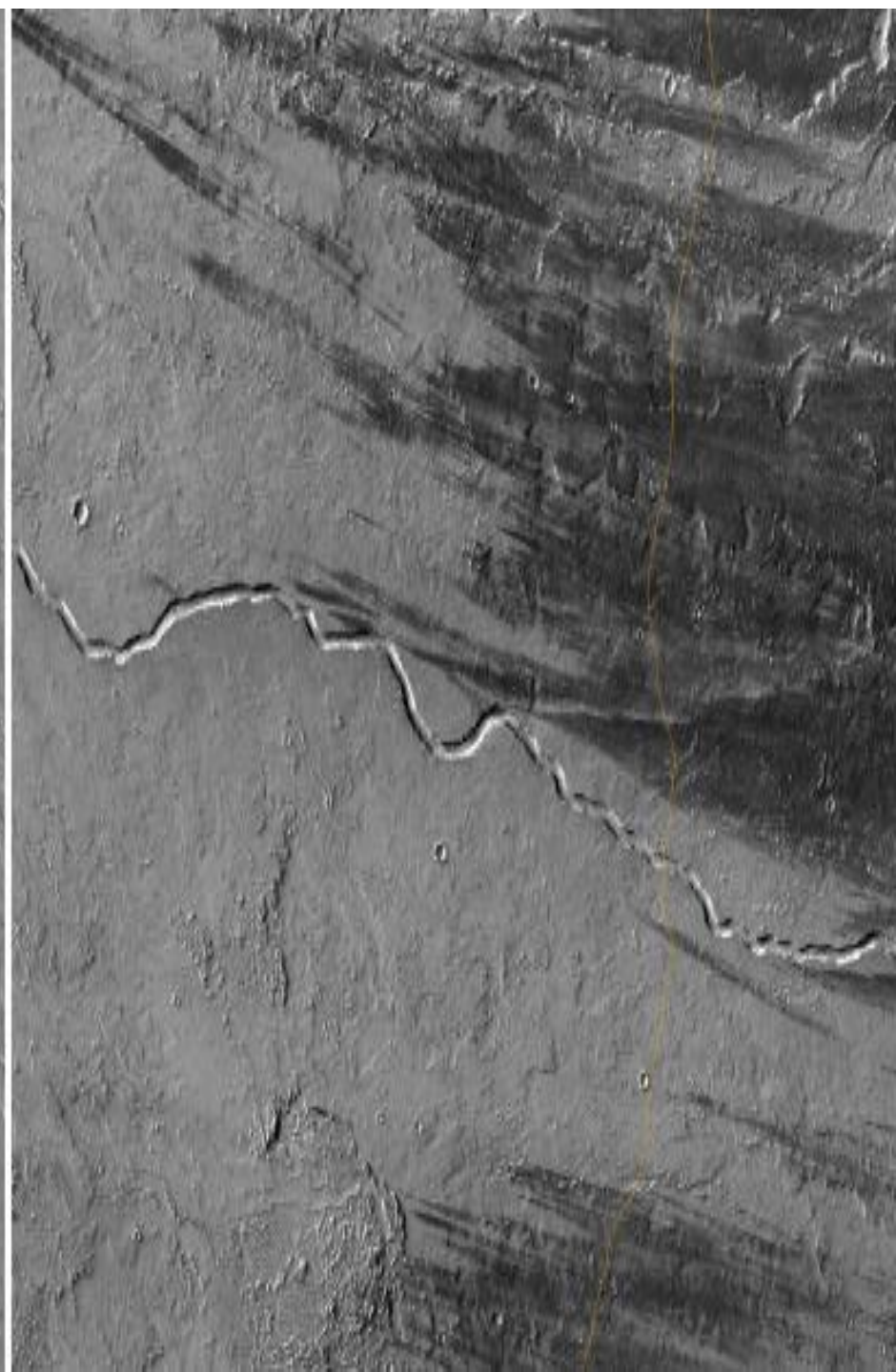
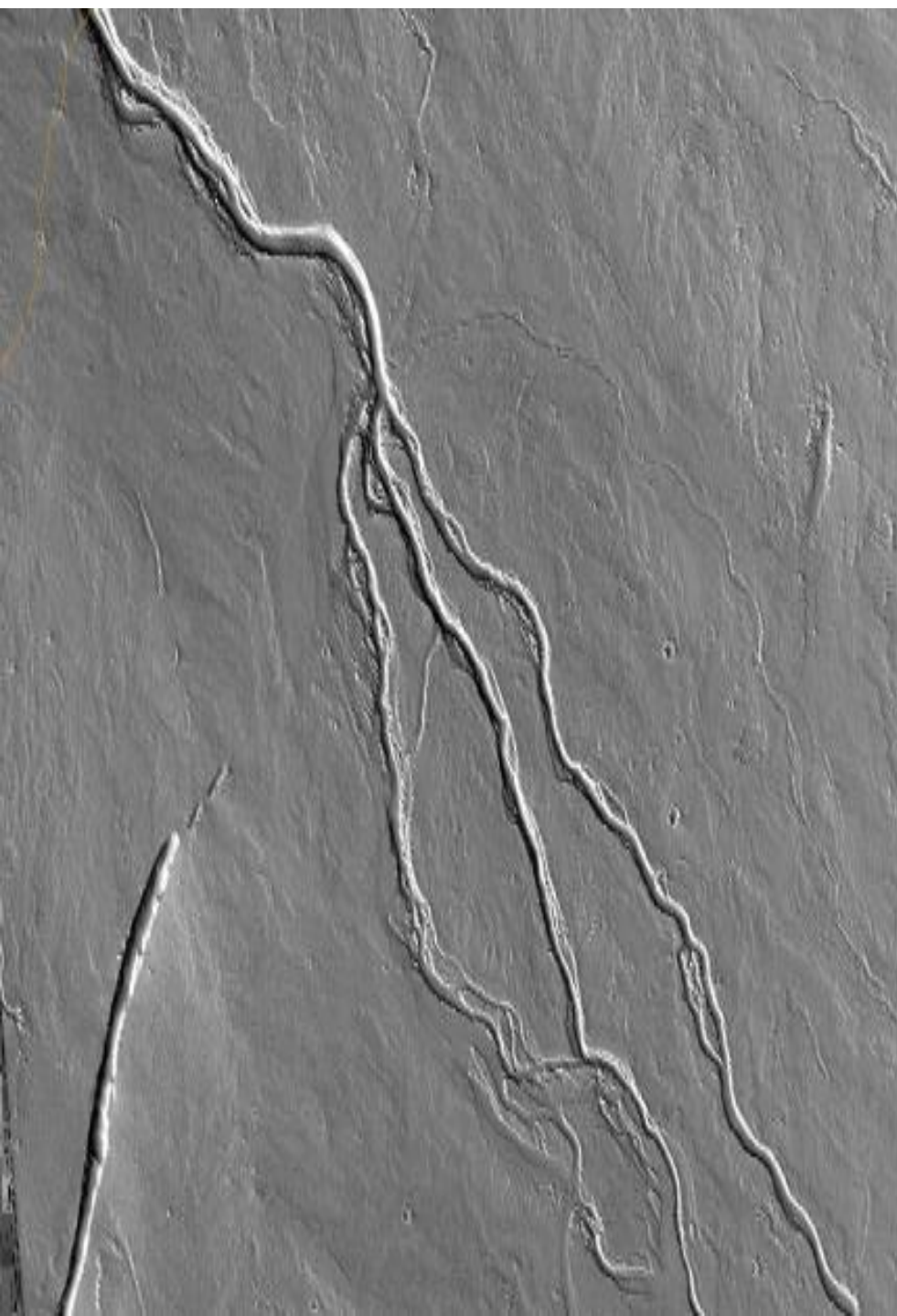


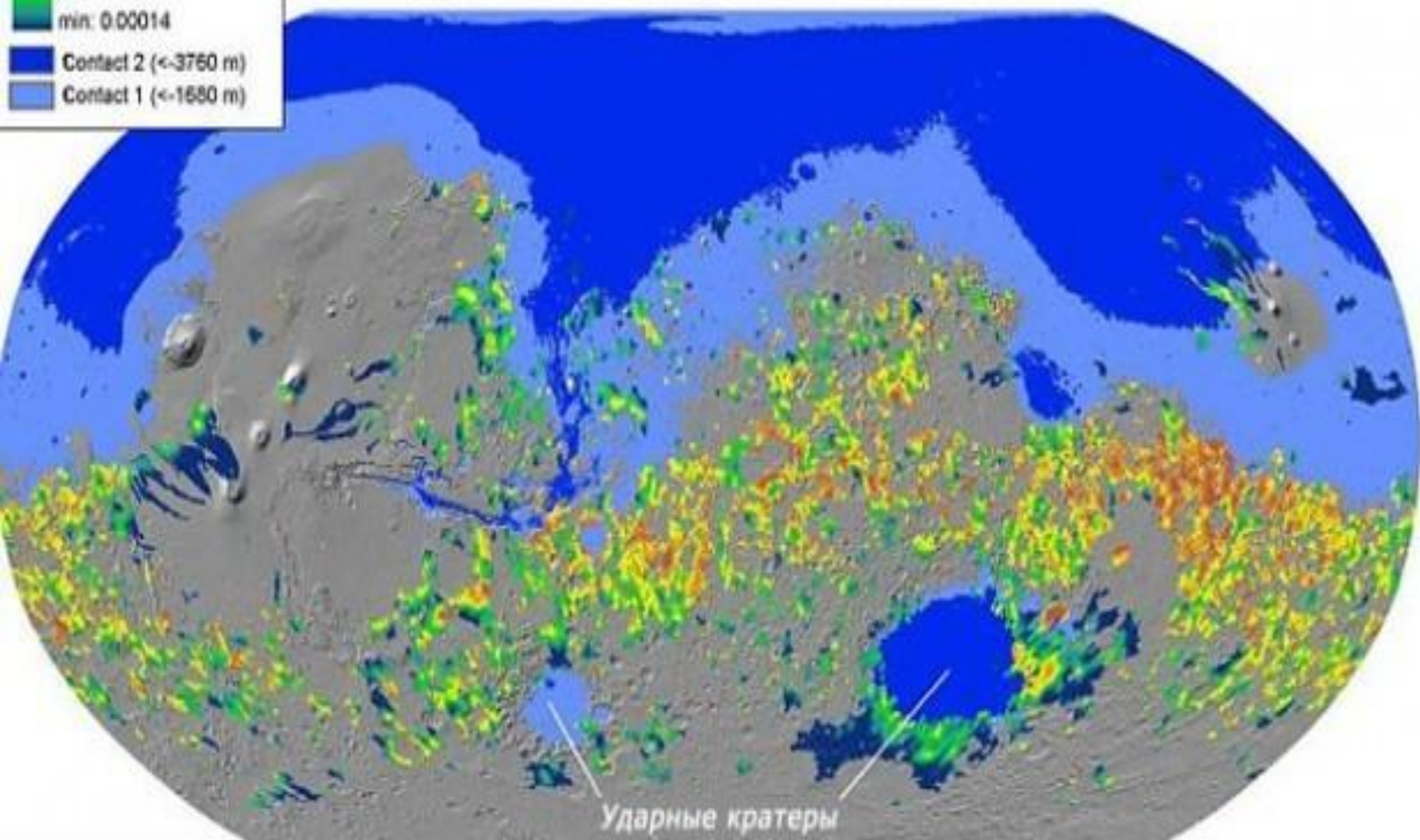
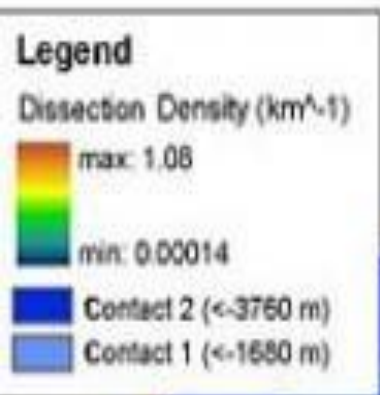


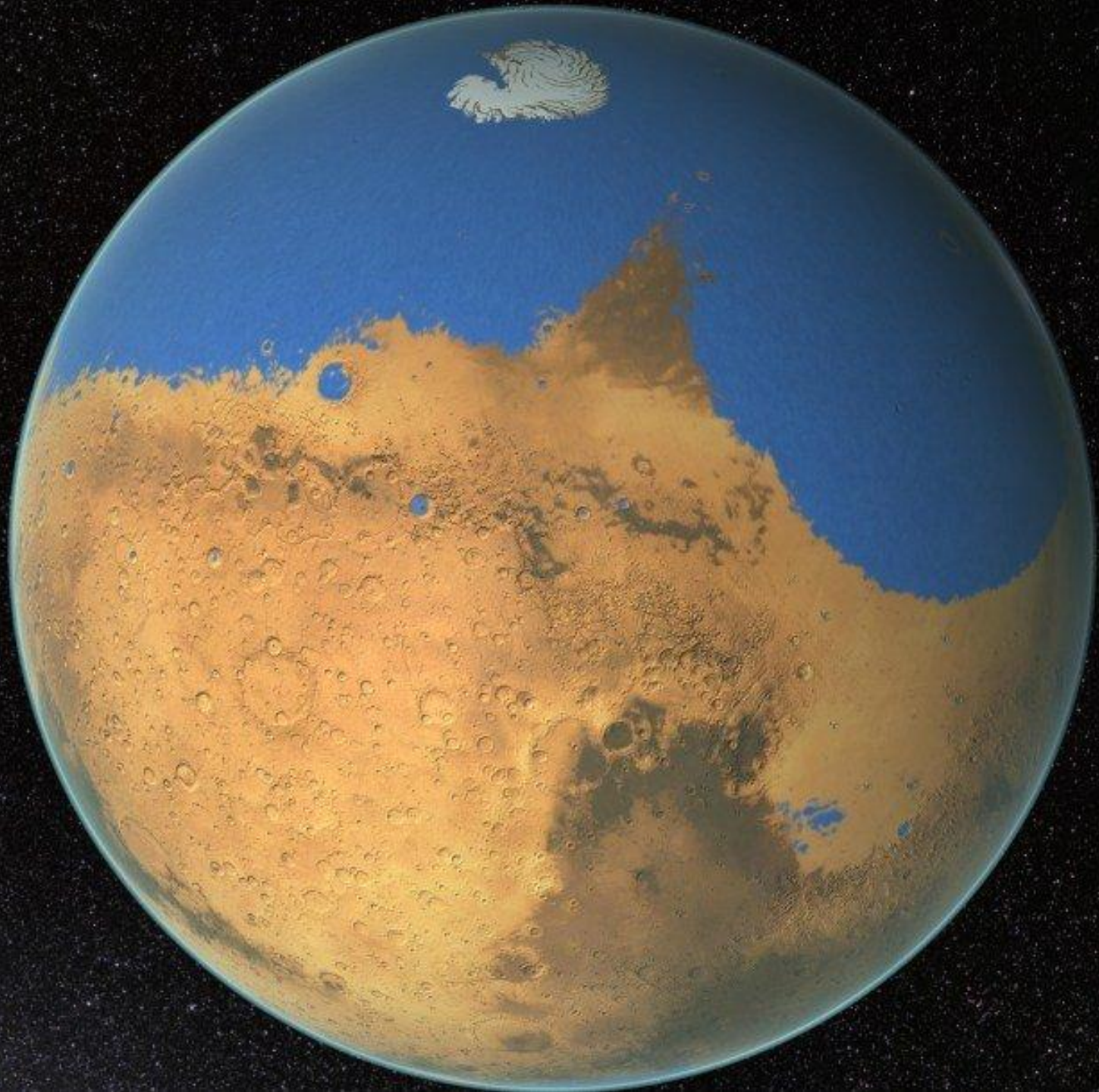


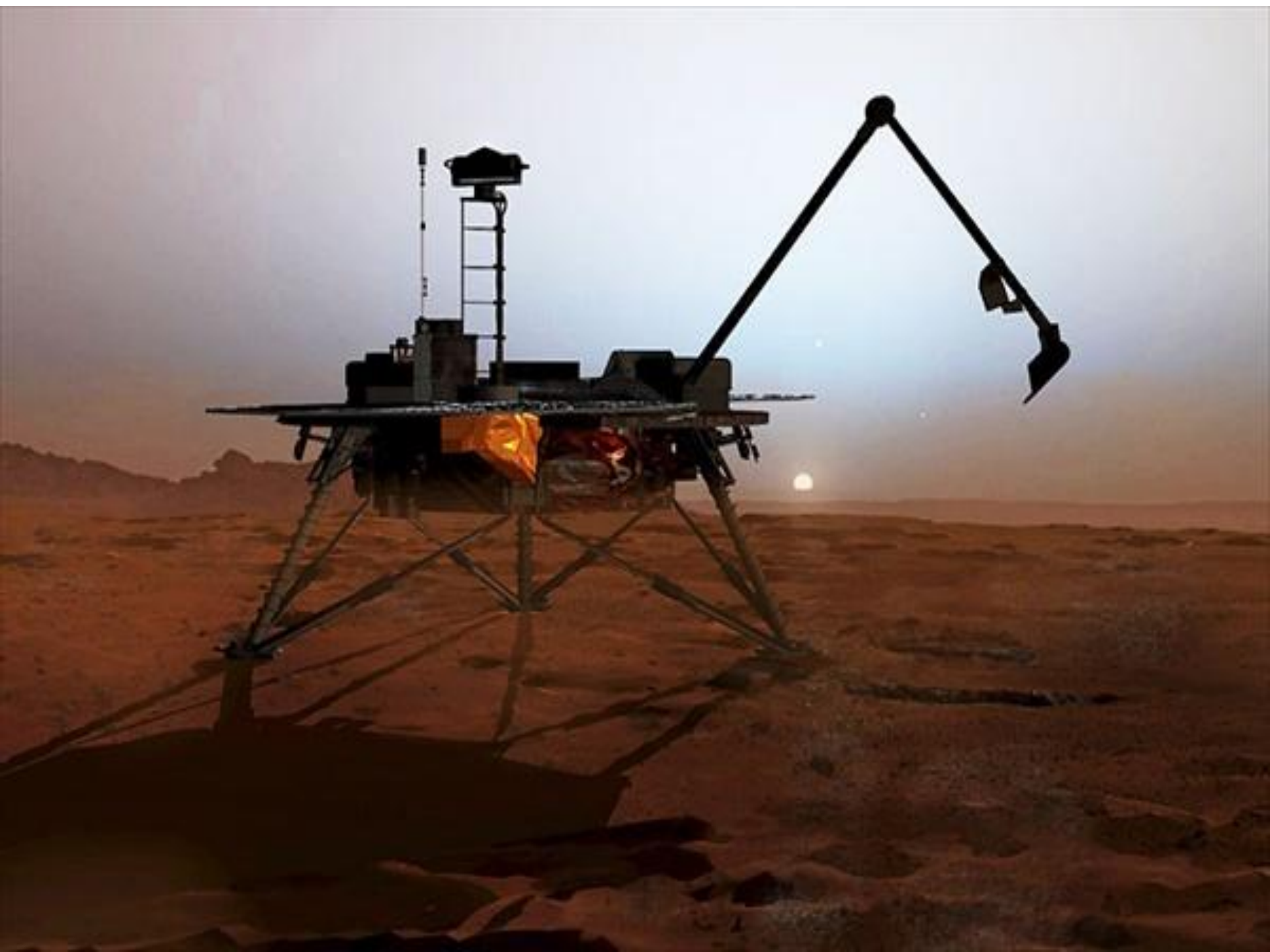












**Sol 20**

**Sol 24**



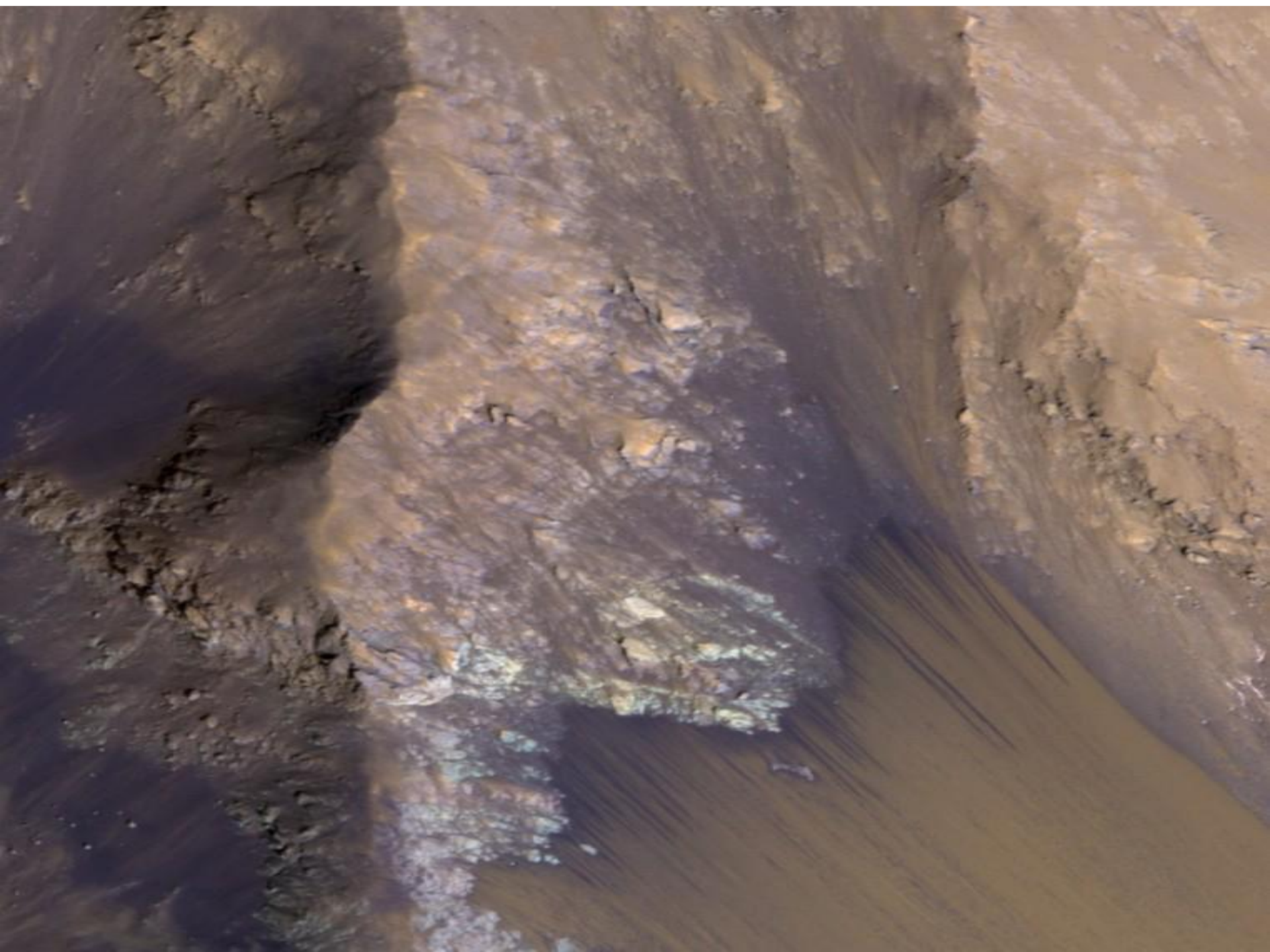


Oct. 18, 2008

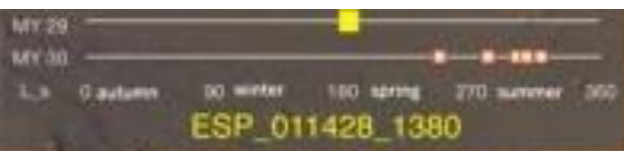


Jan. 14, 2009

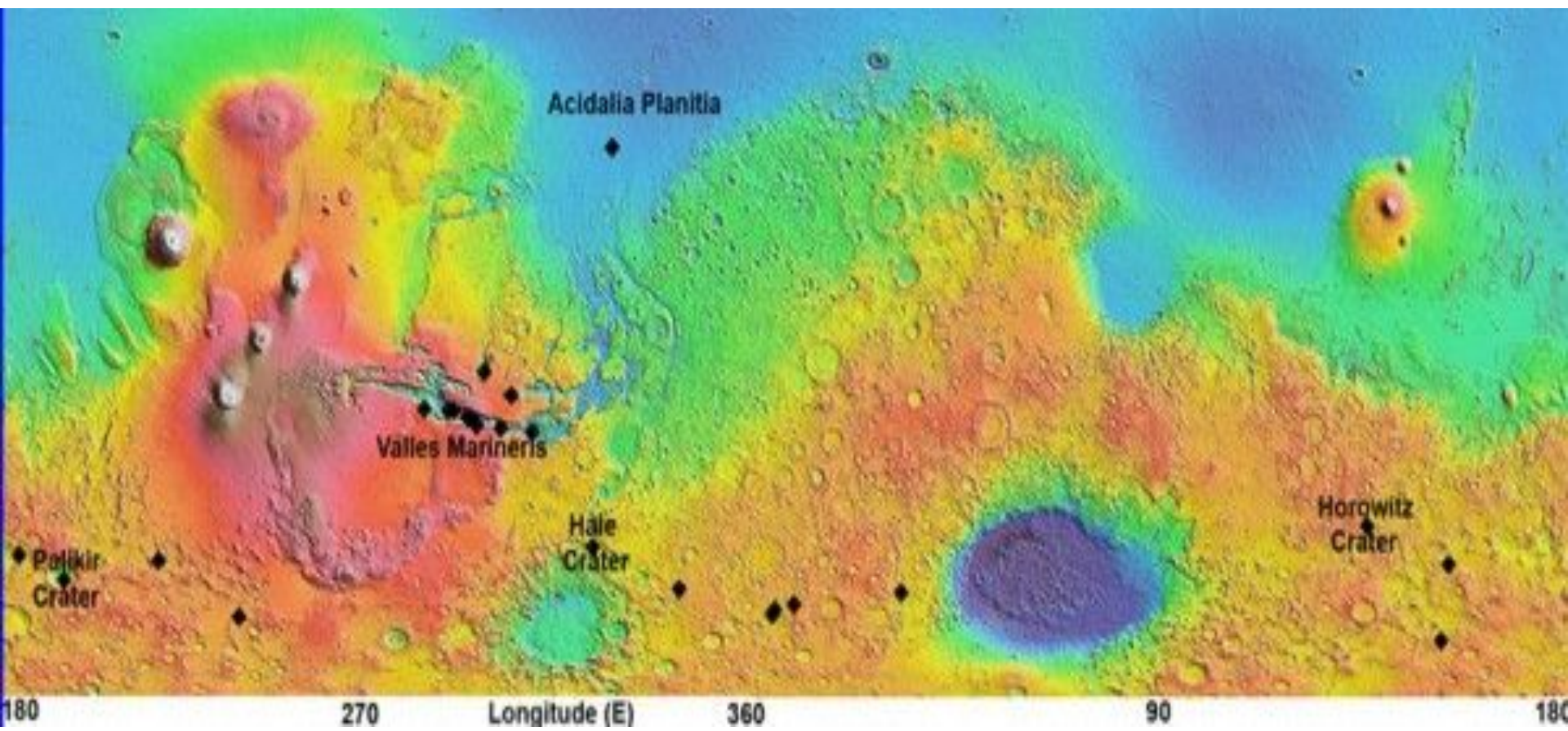


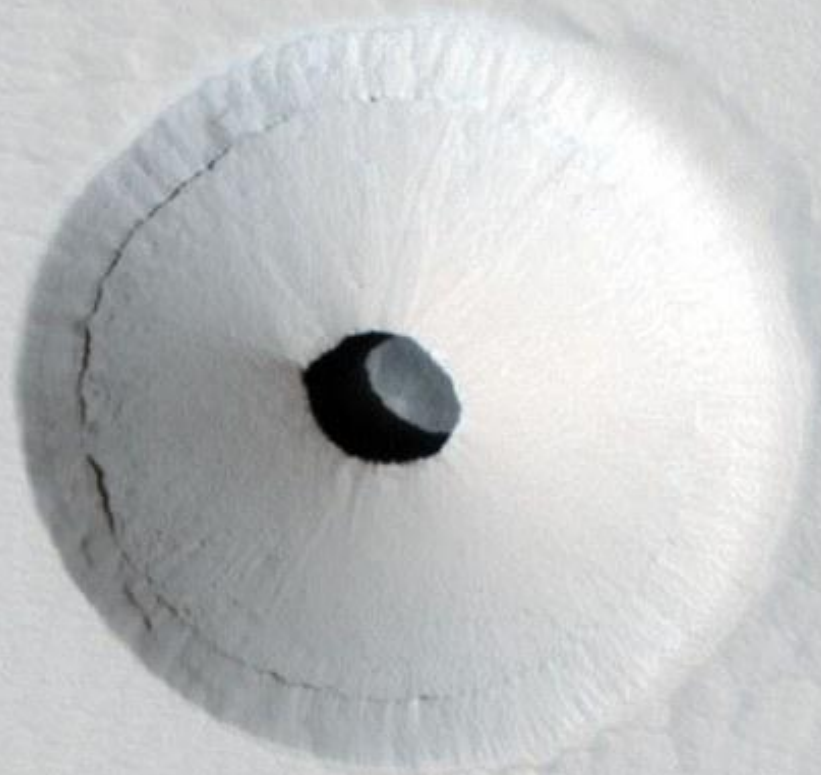








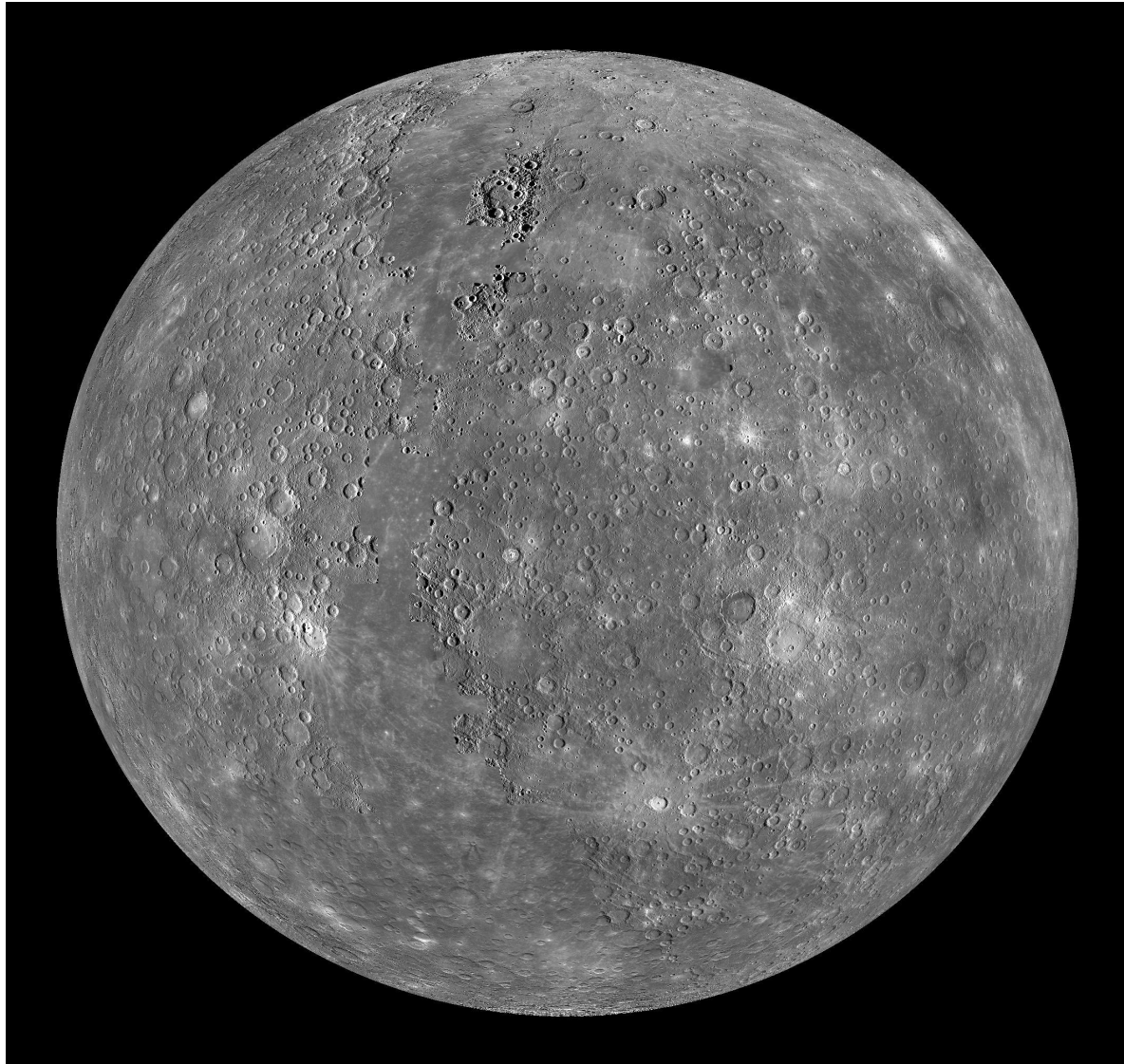


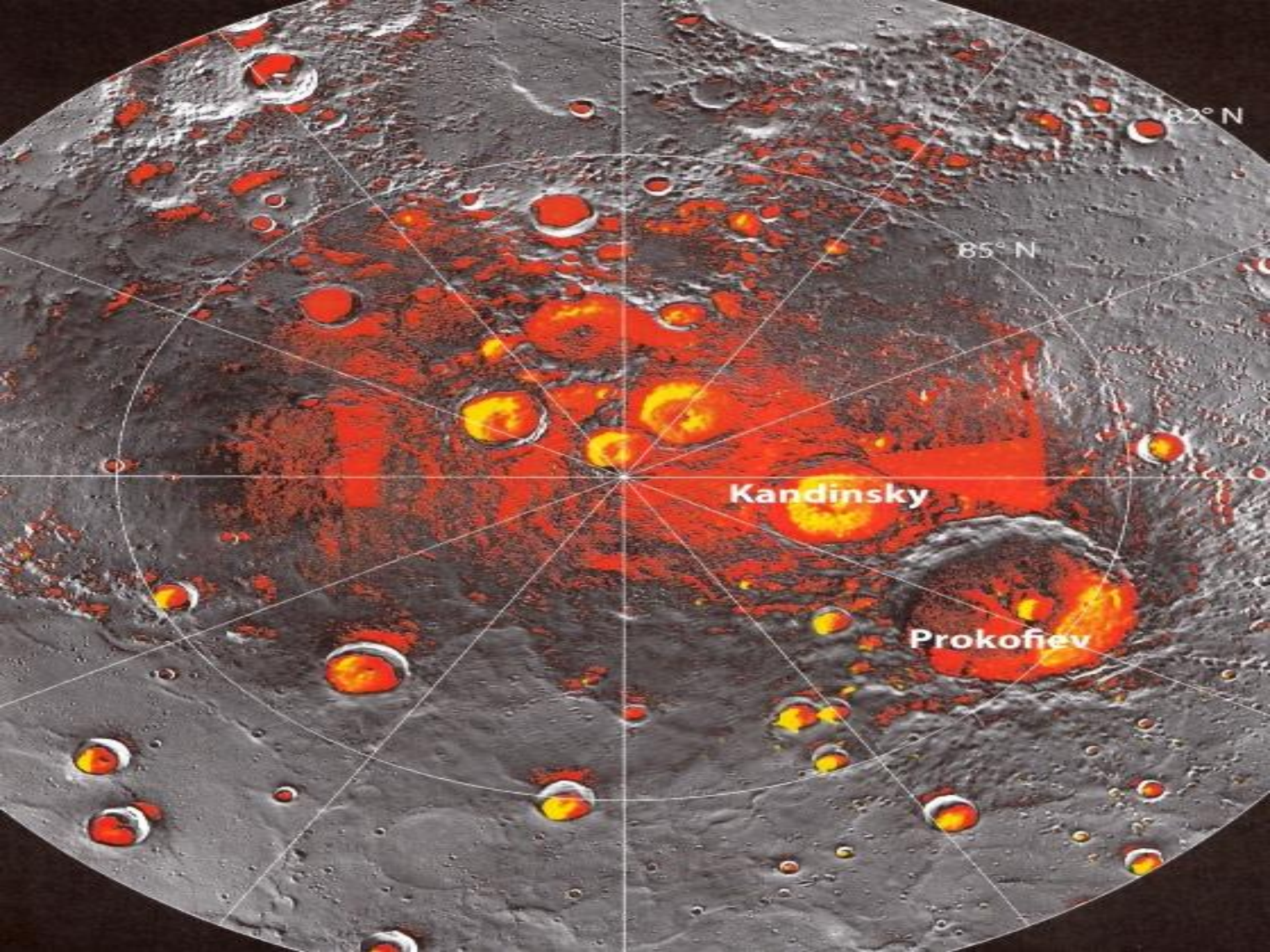






# Меркурий





# Юпитер



Европа

Ио



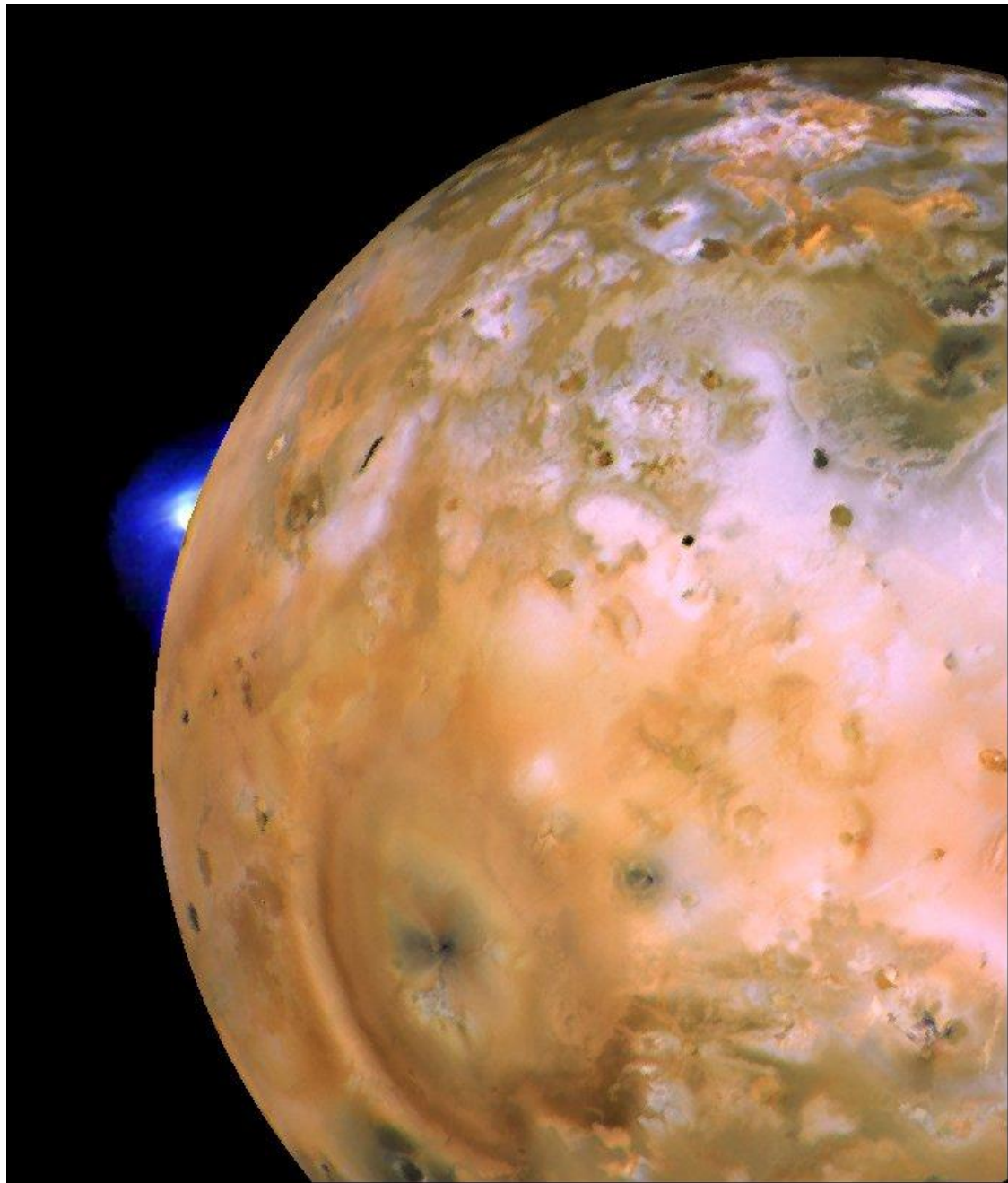
Луна

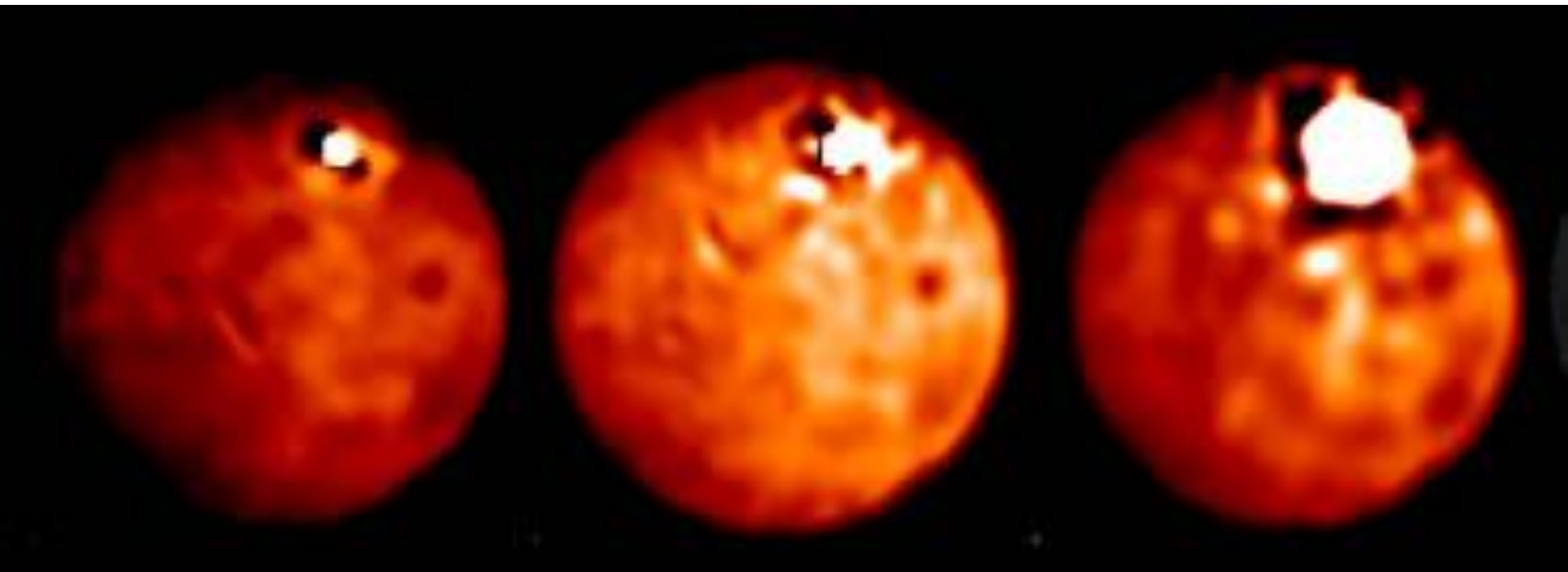


Каллисто



Ганимед





08-29

08-30

09-01

09-02

09-03

09-04

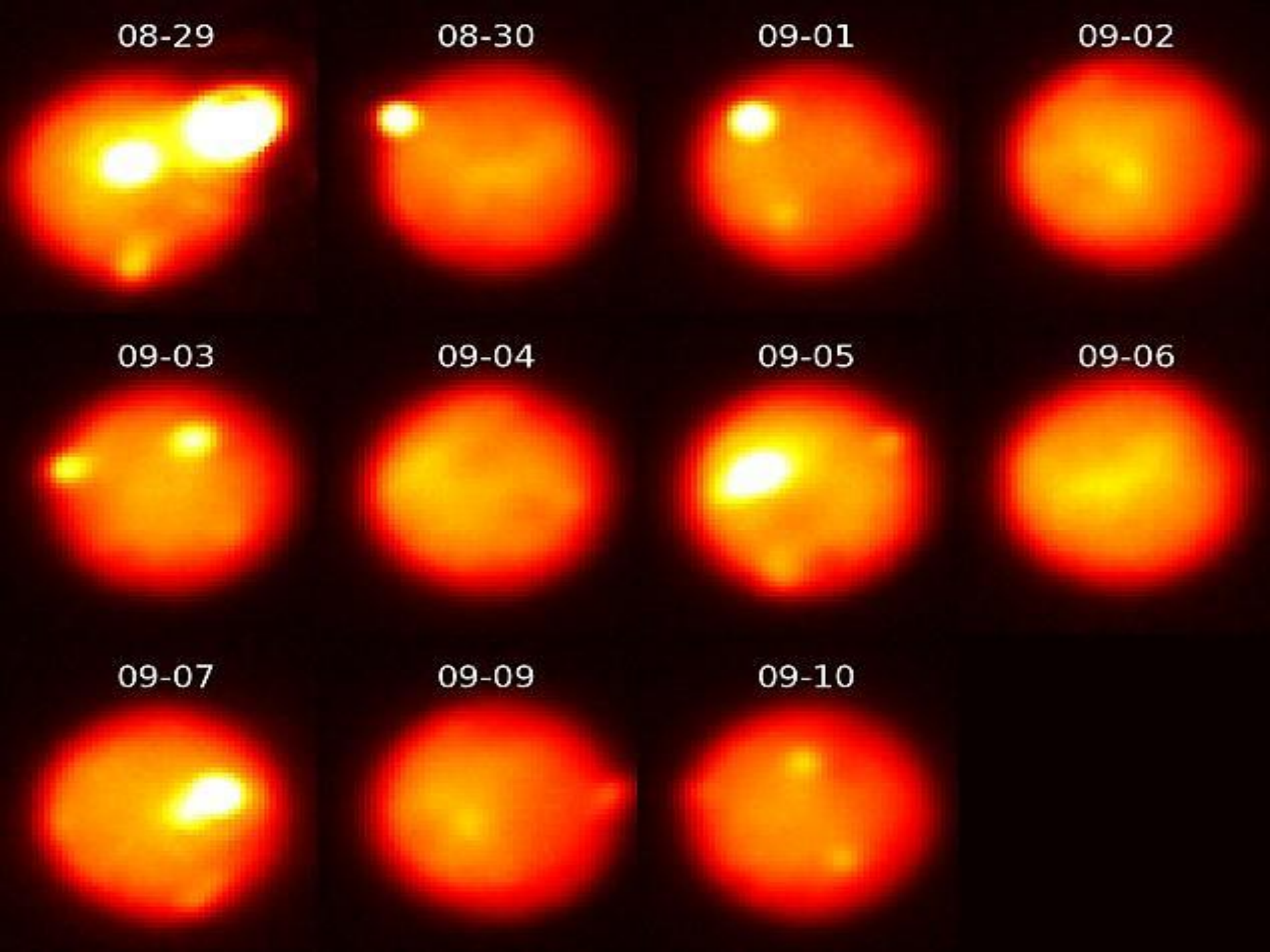
09-05

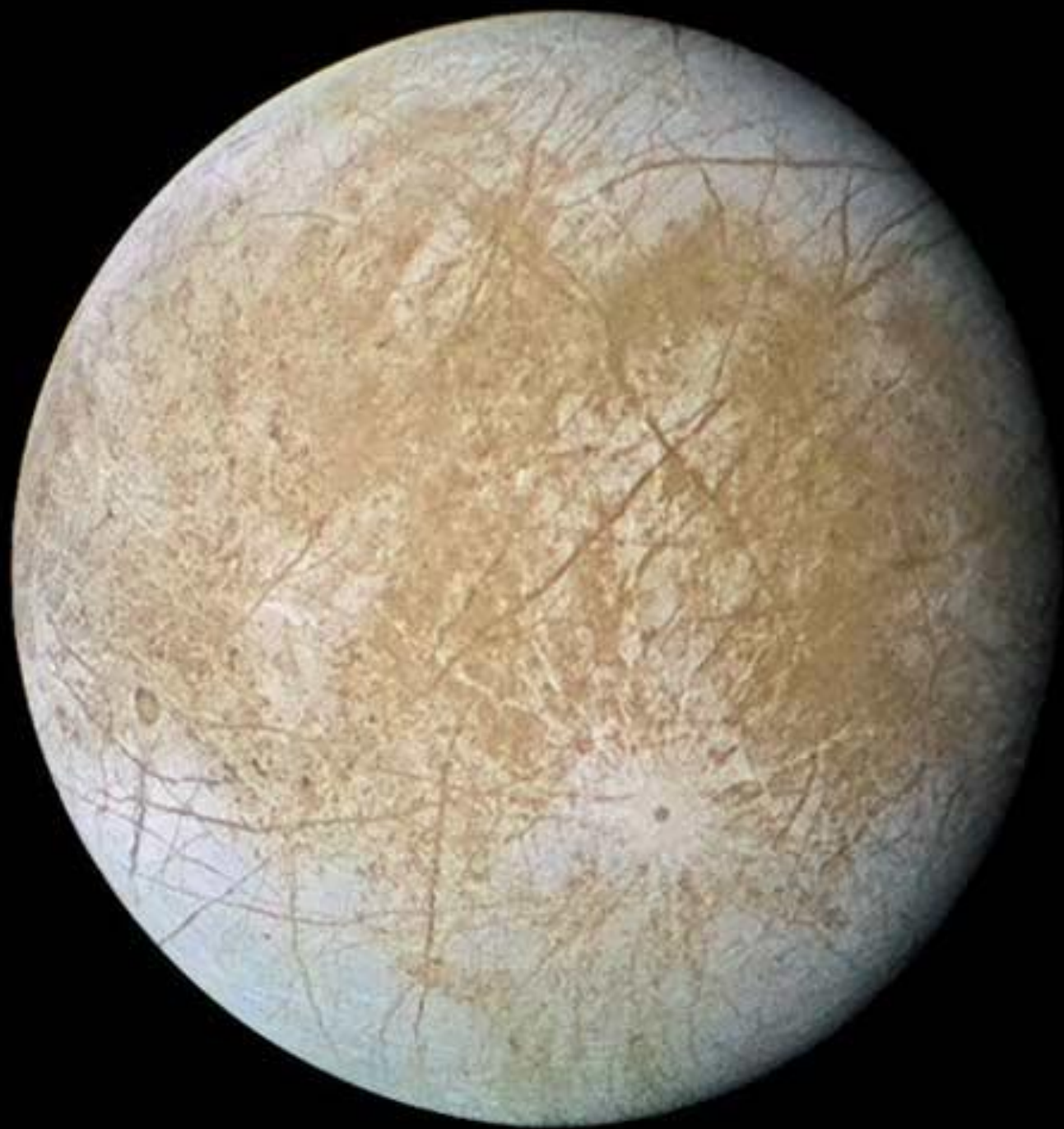
09-06

09-07

09-09

09-10

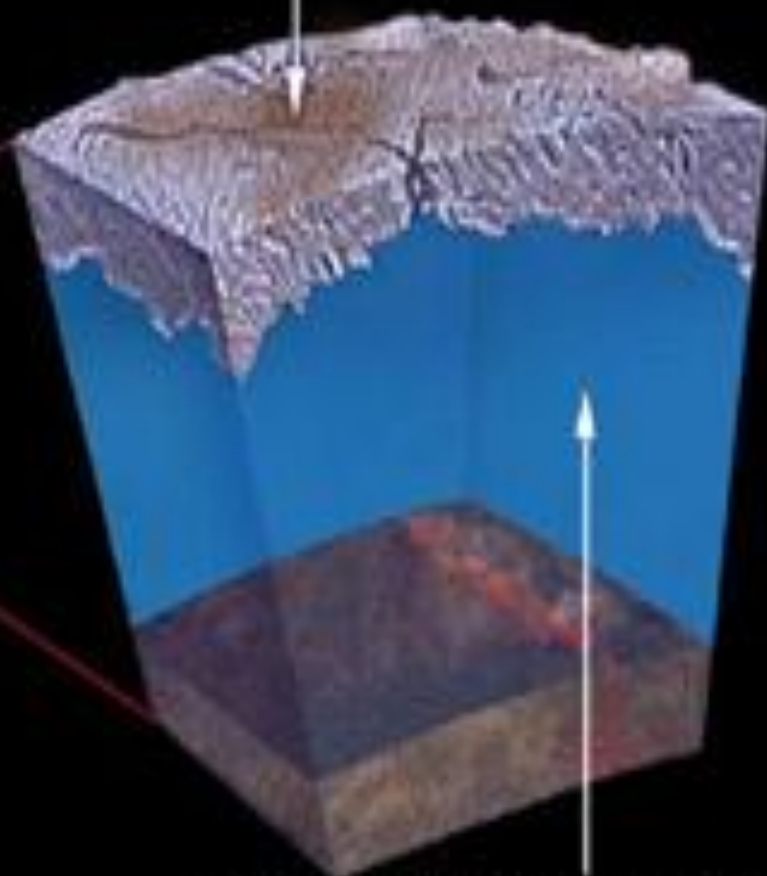
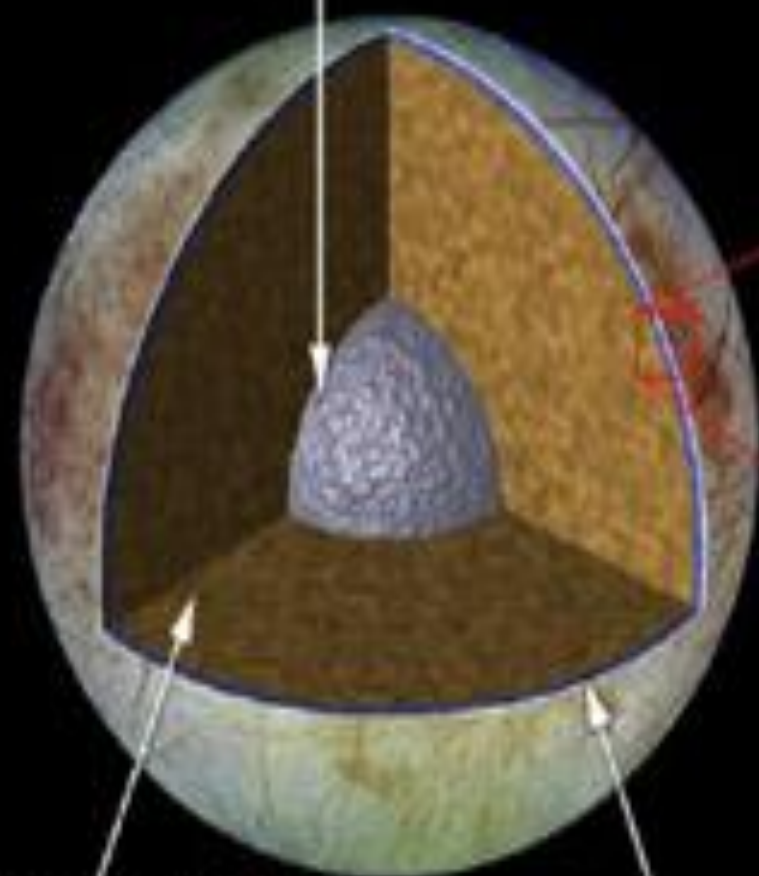






Металлическое ядро

Ледяное покрытие

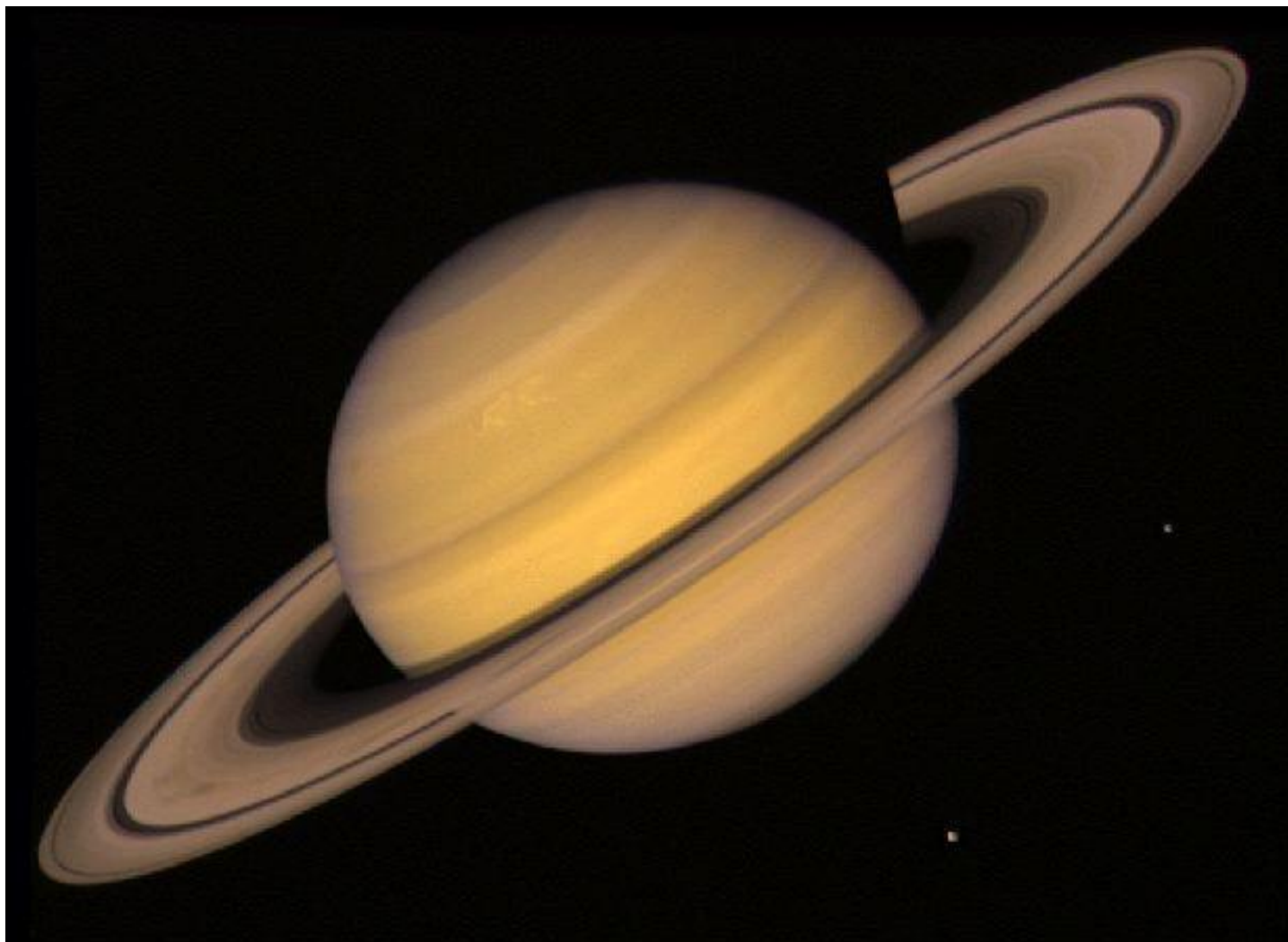


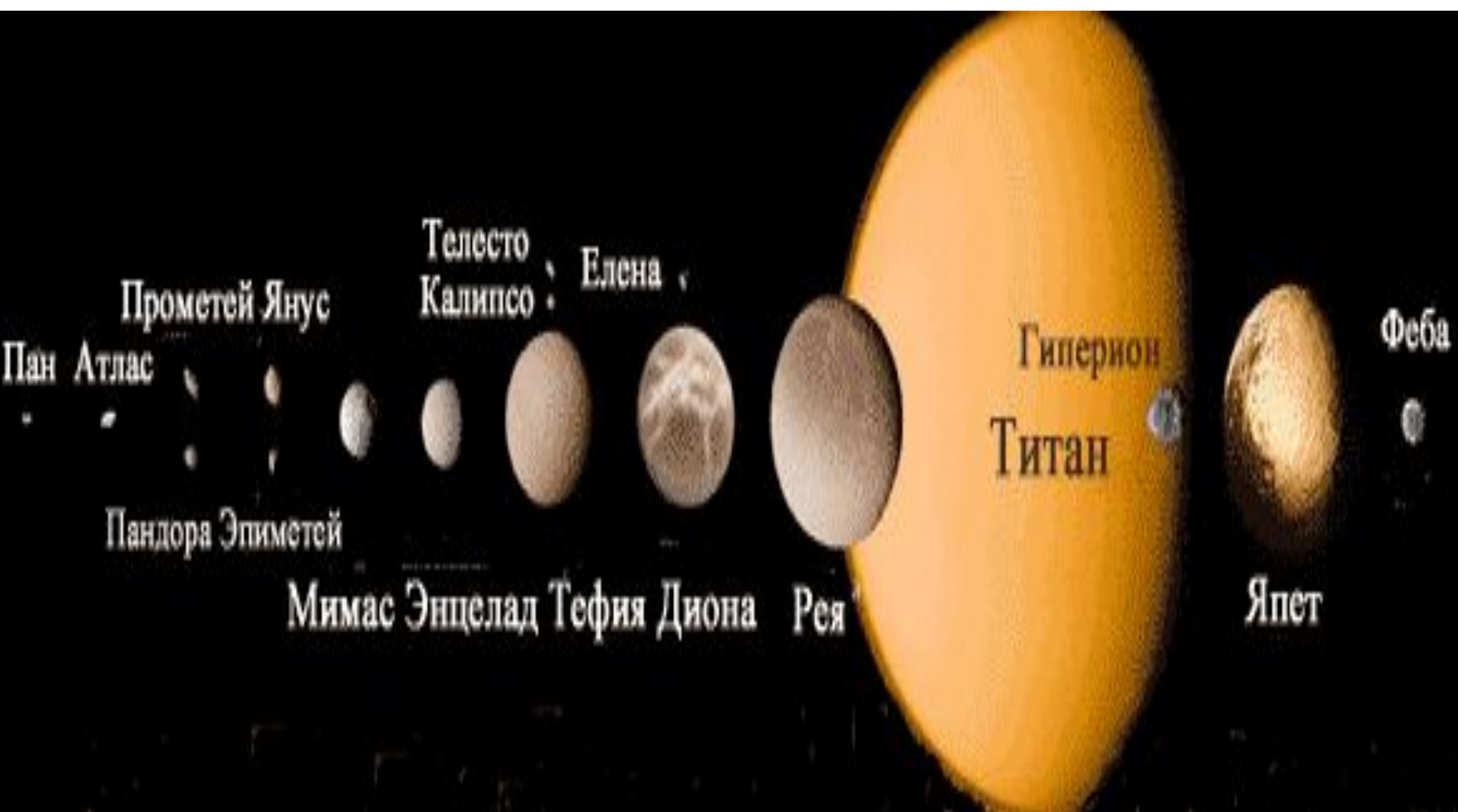
Каменные недра

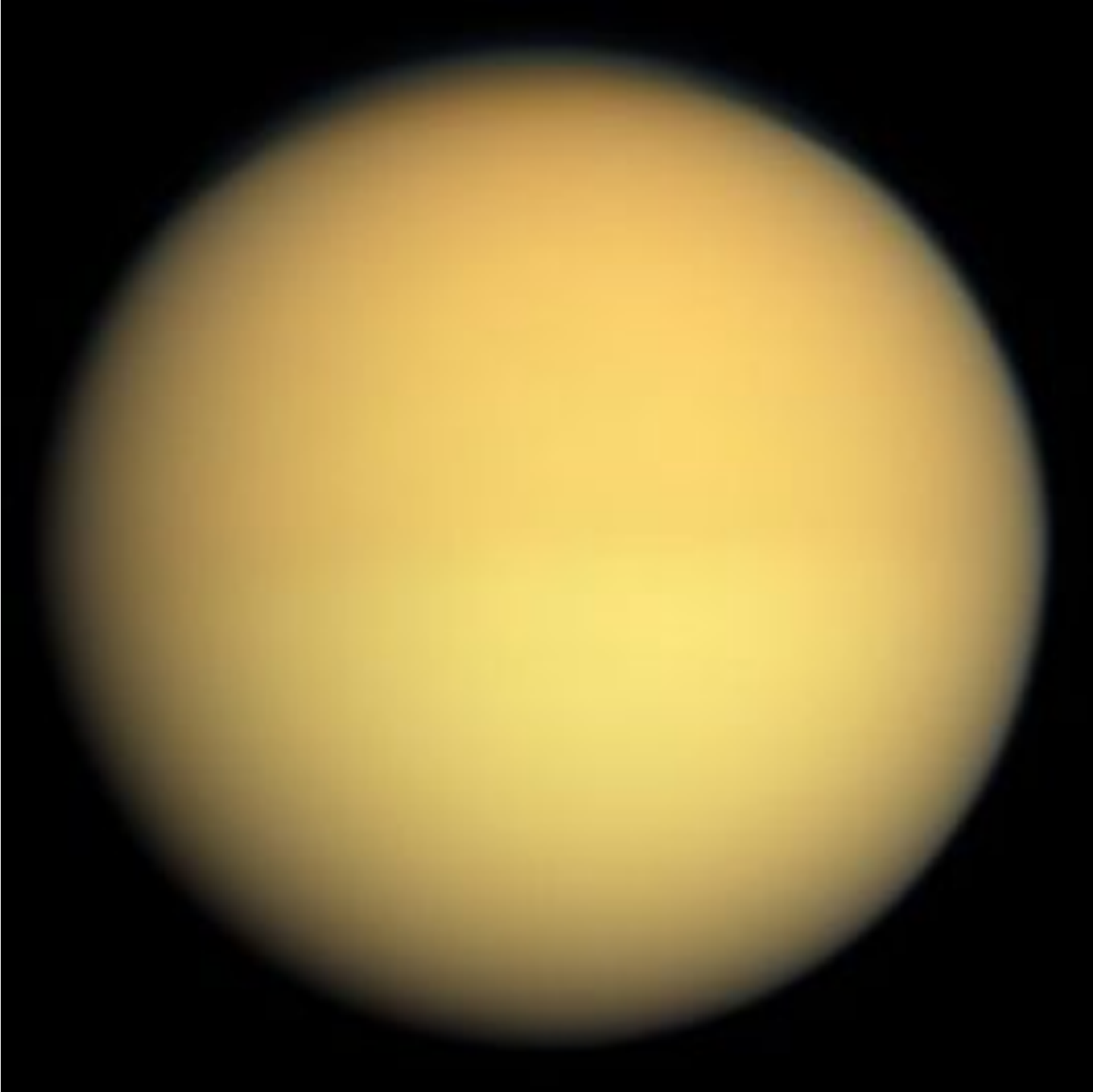
Слой жидкой воды

Жидкий океан ниже льда

# Сатурн

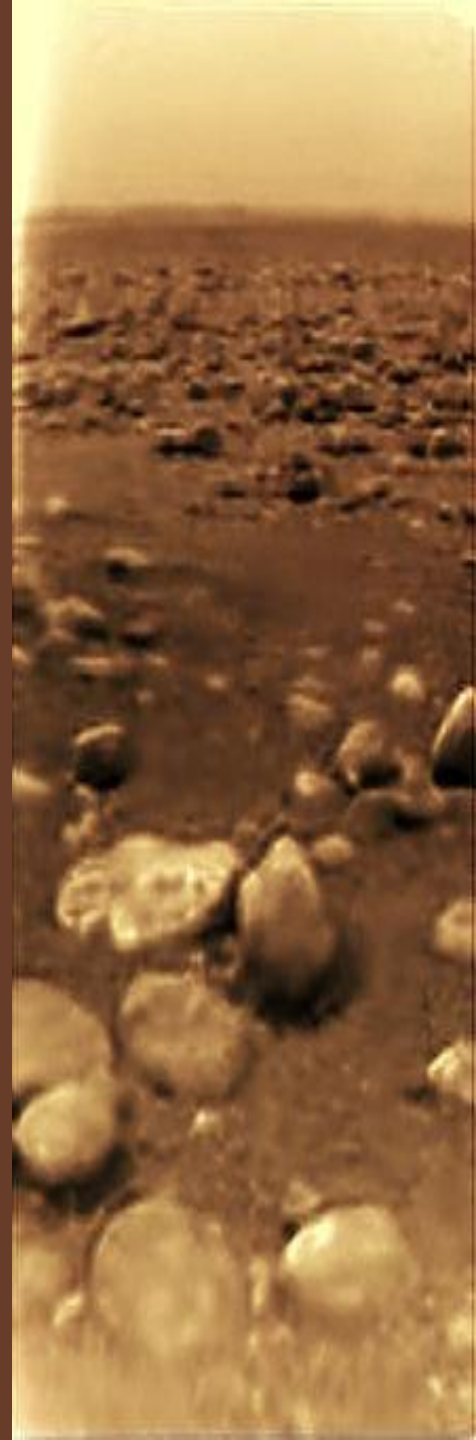
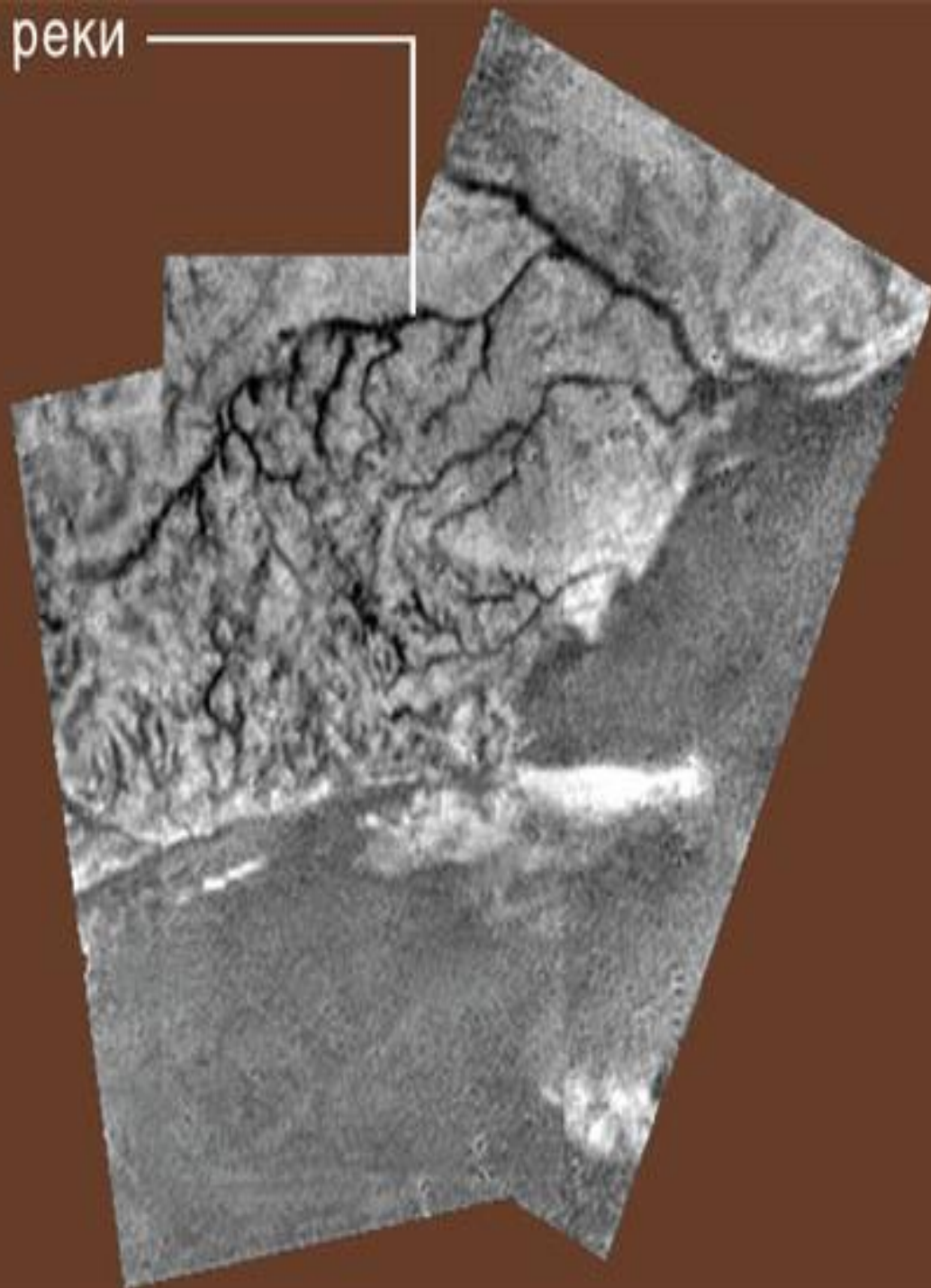


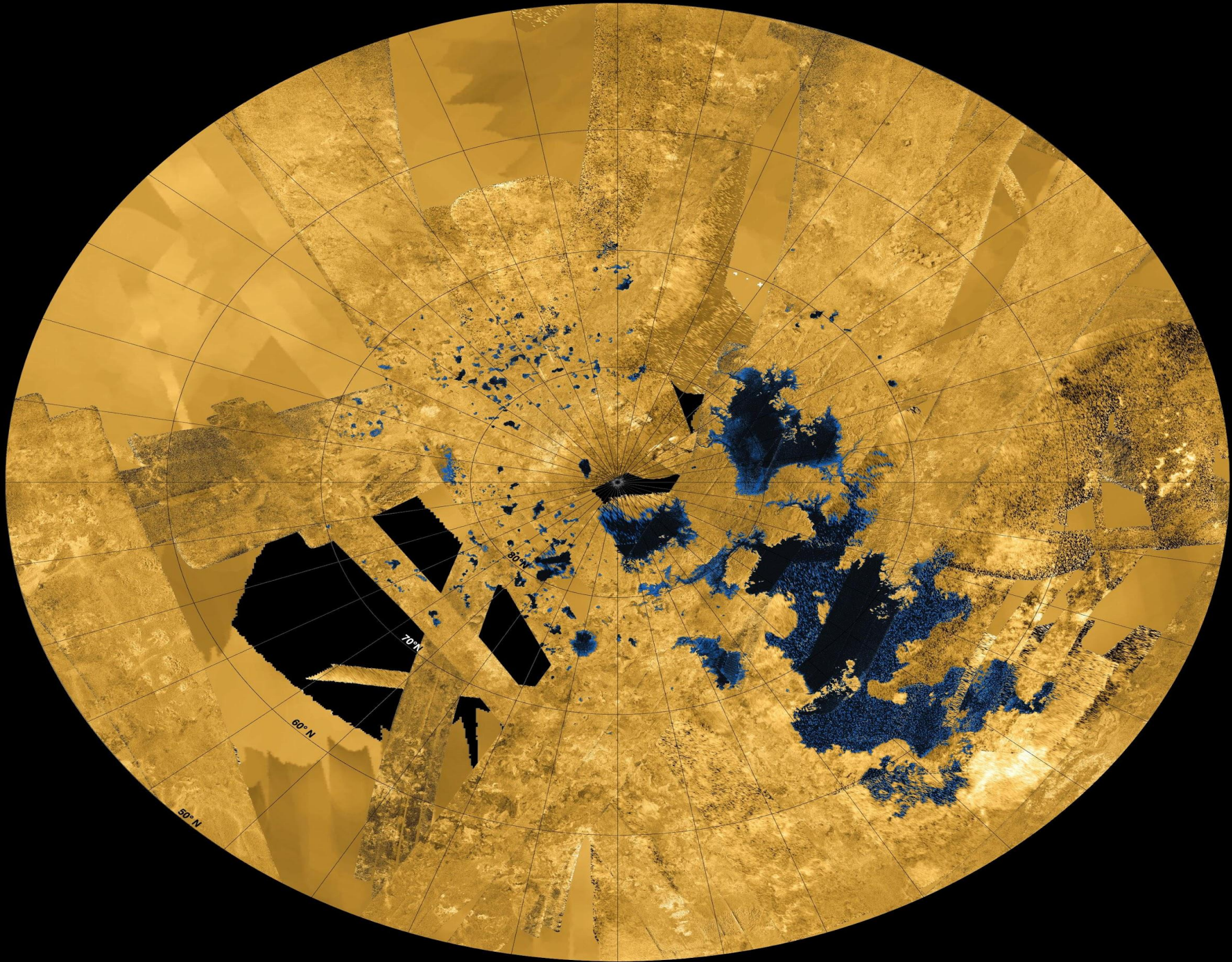


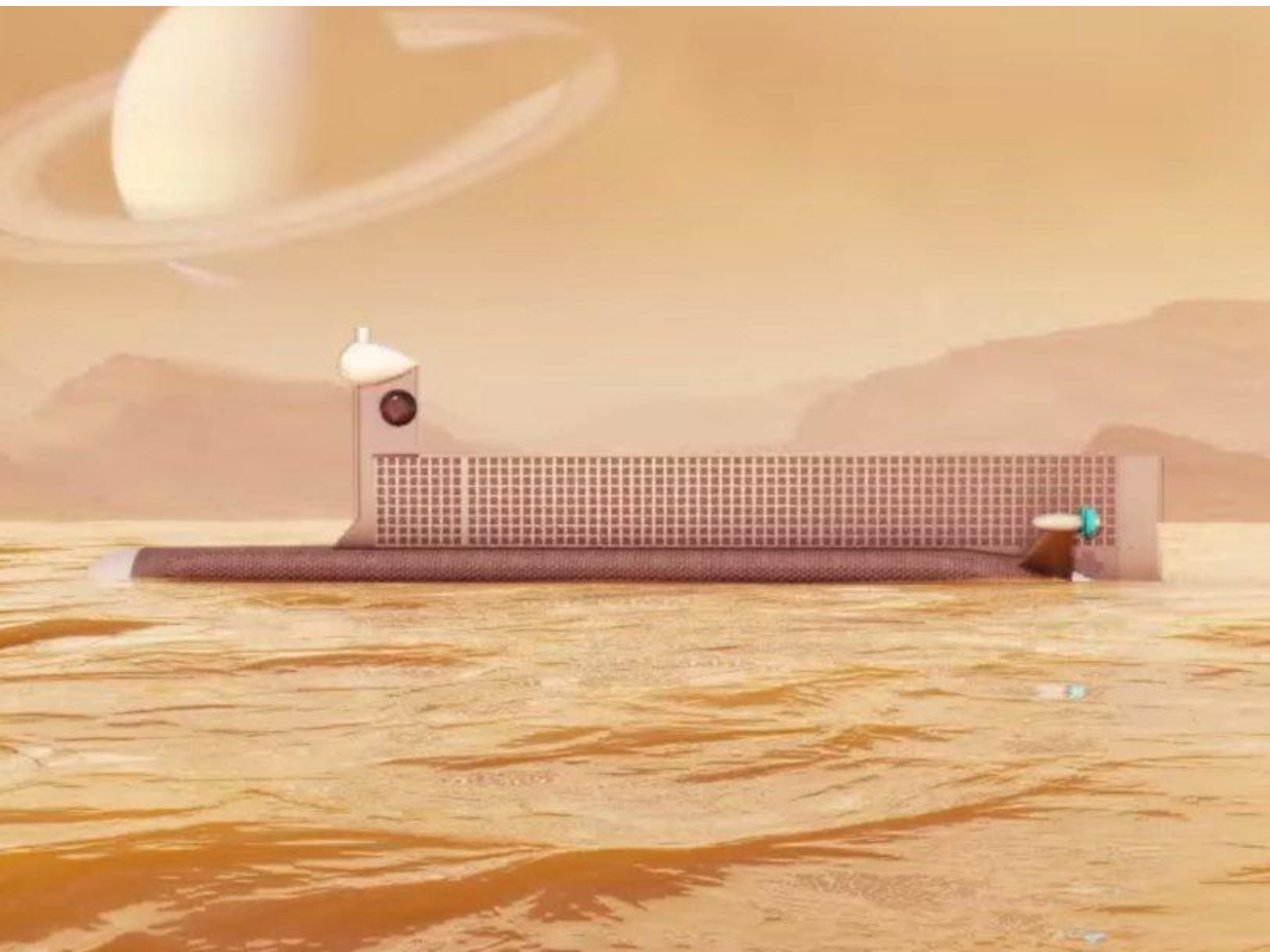




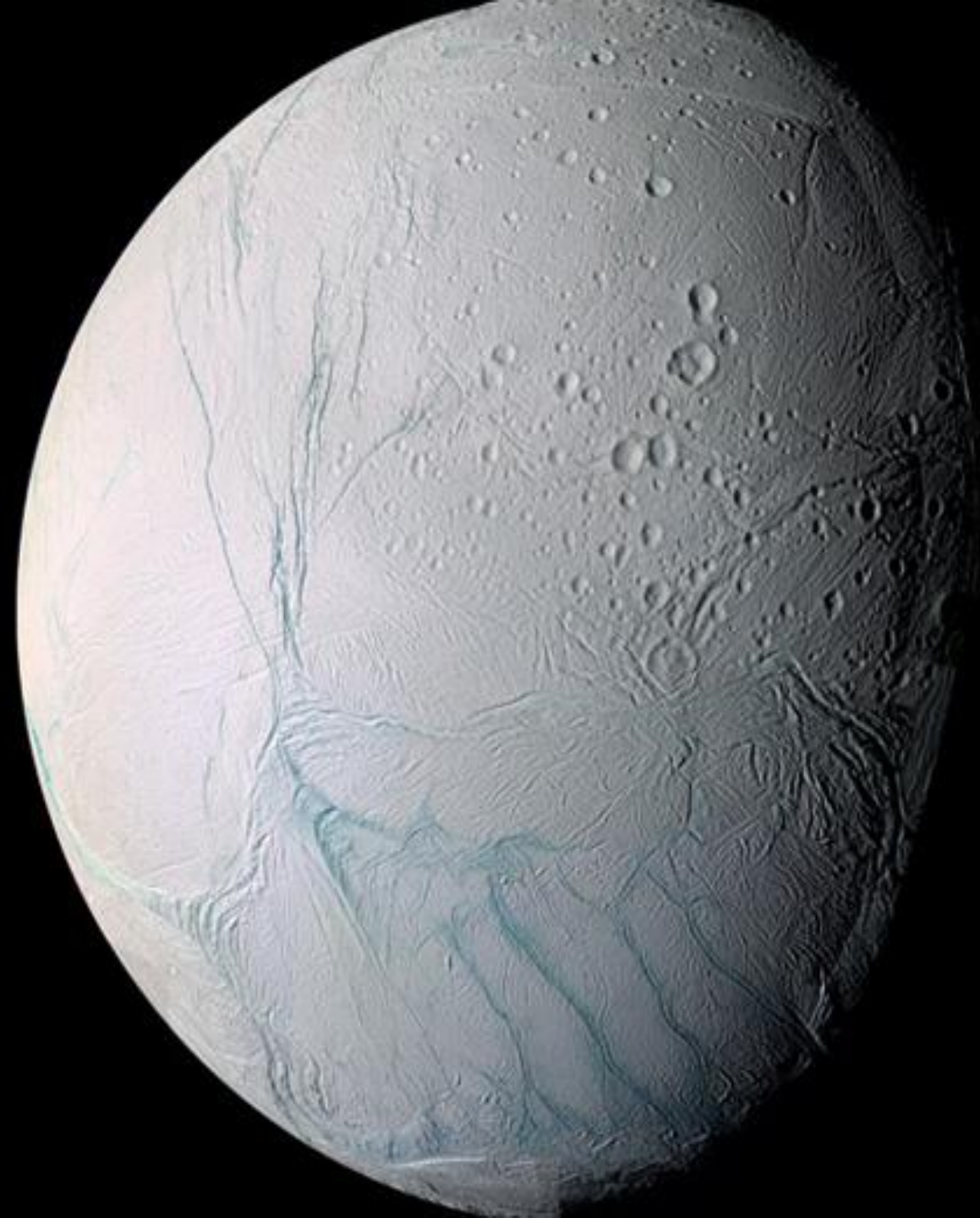
Русло реки

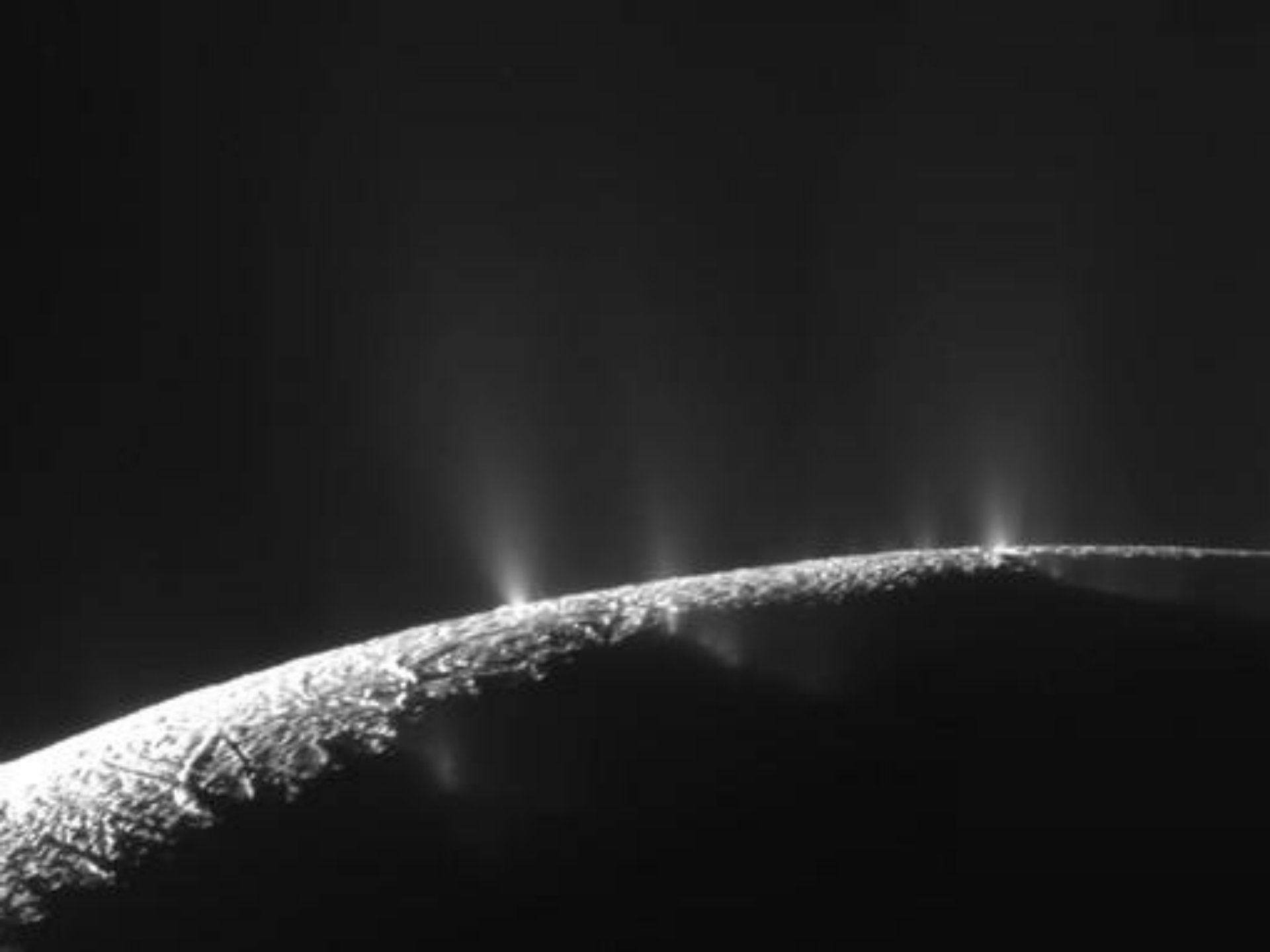


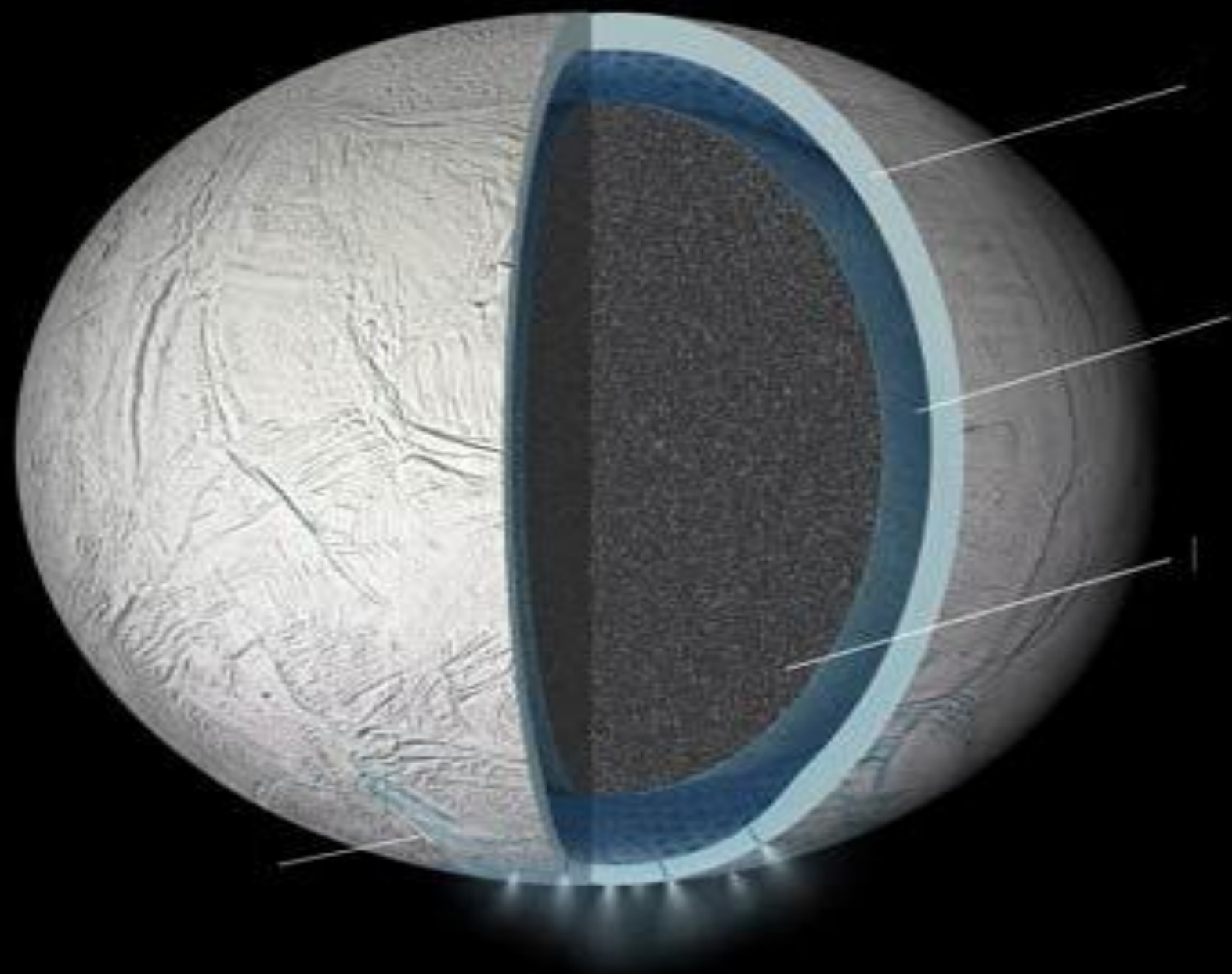


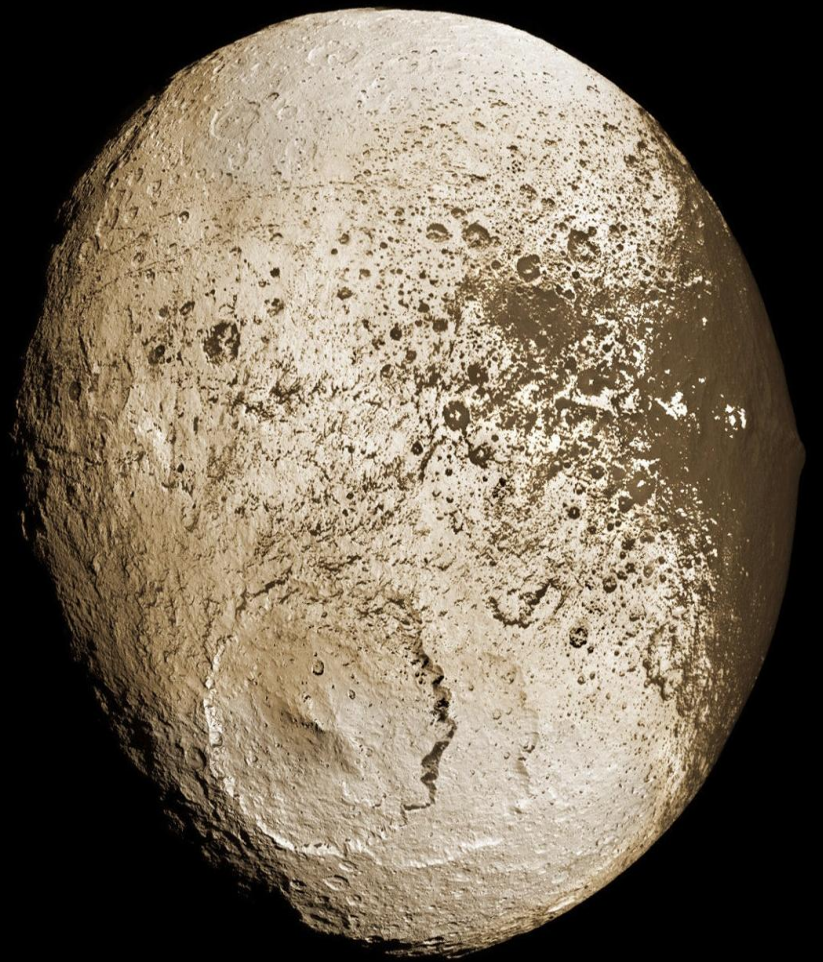
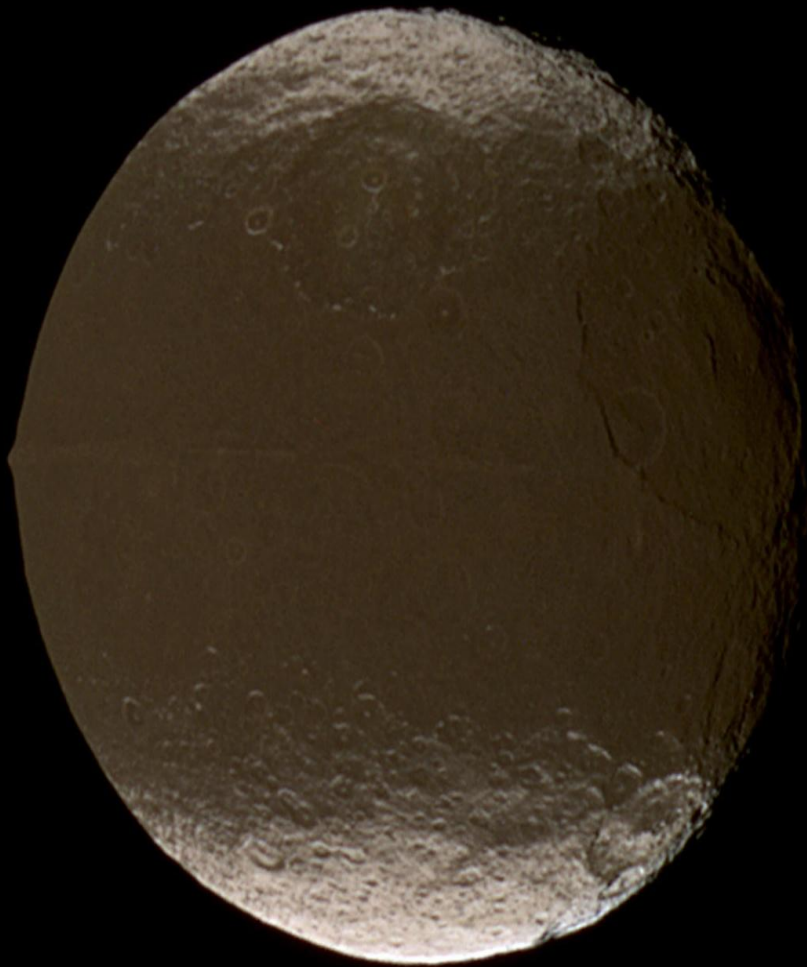


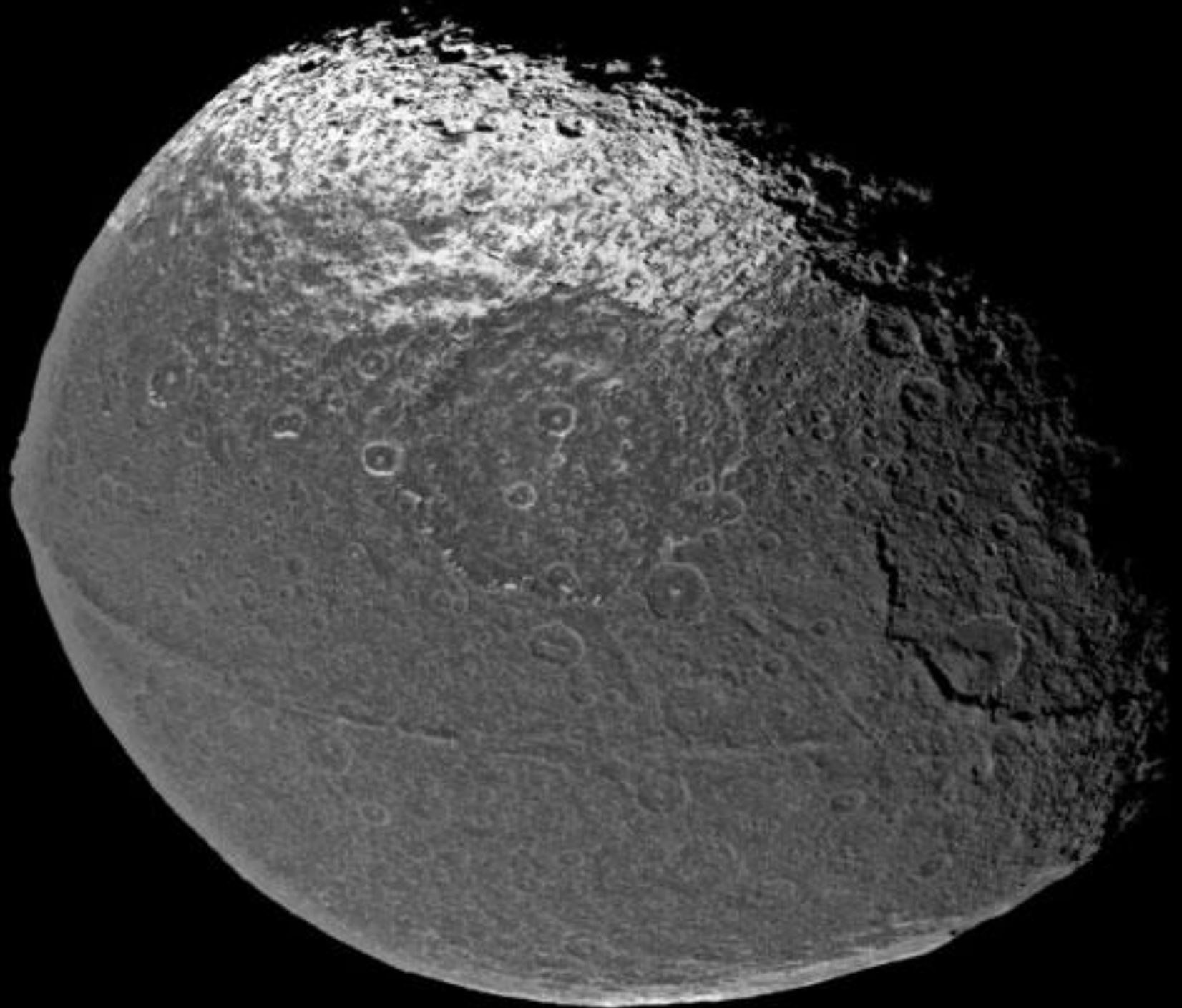


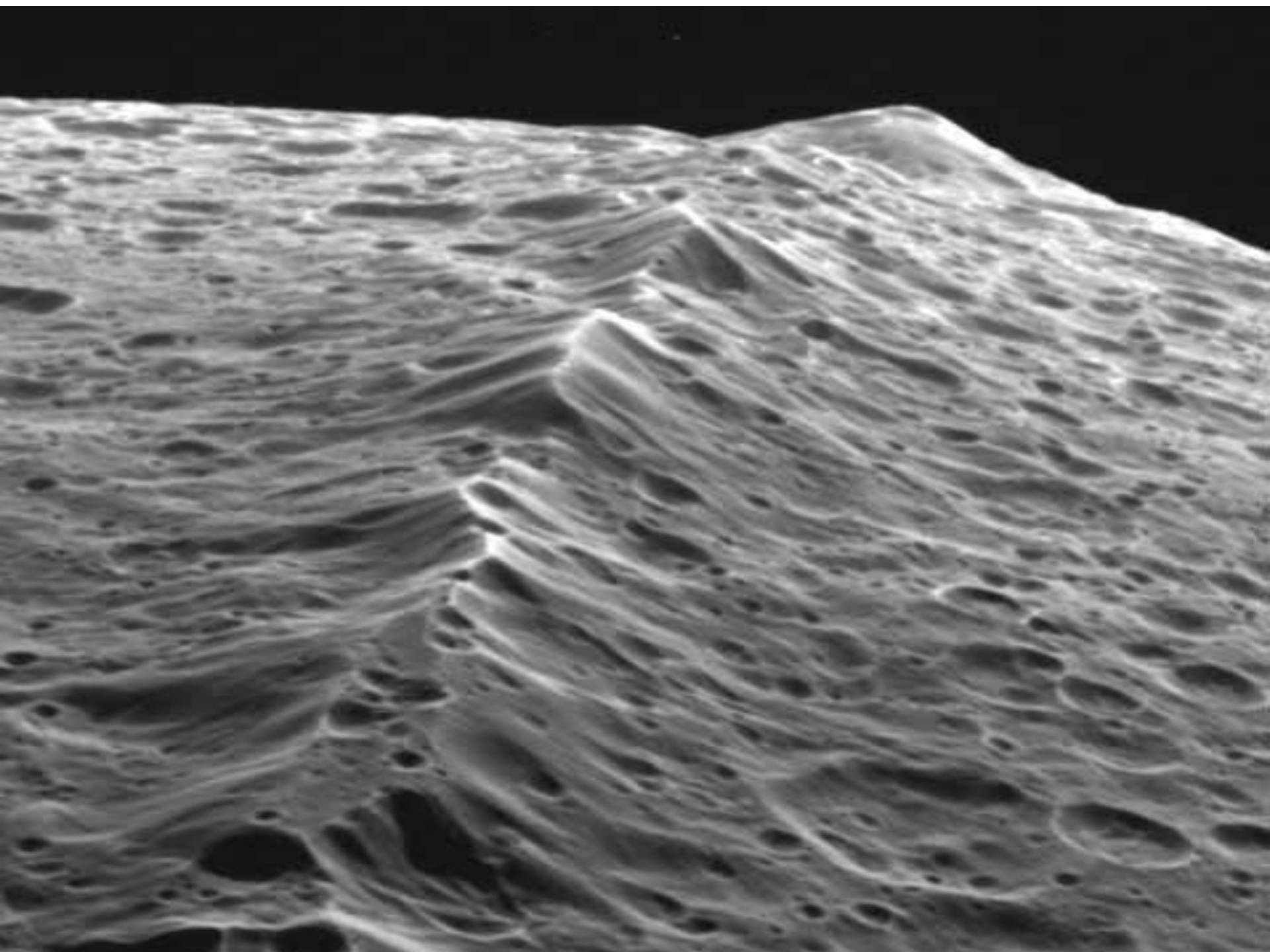


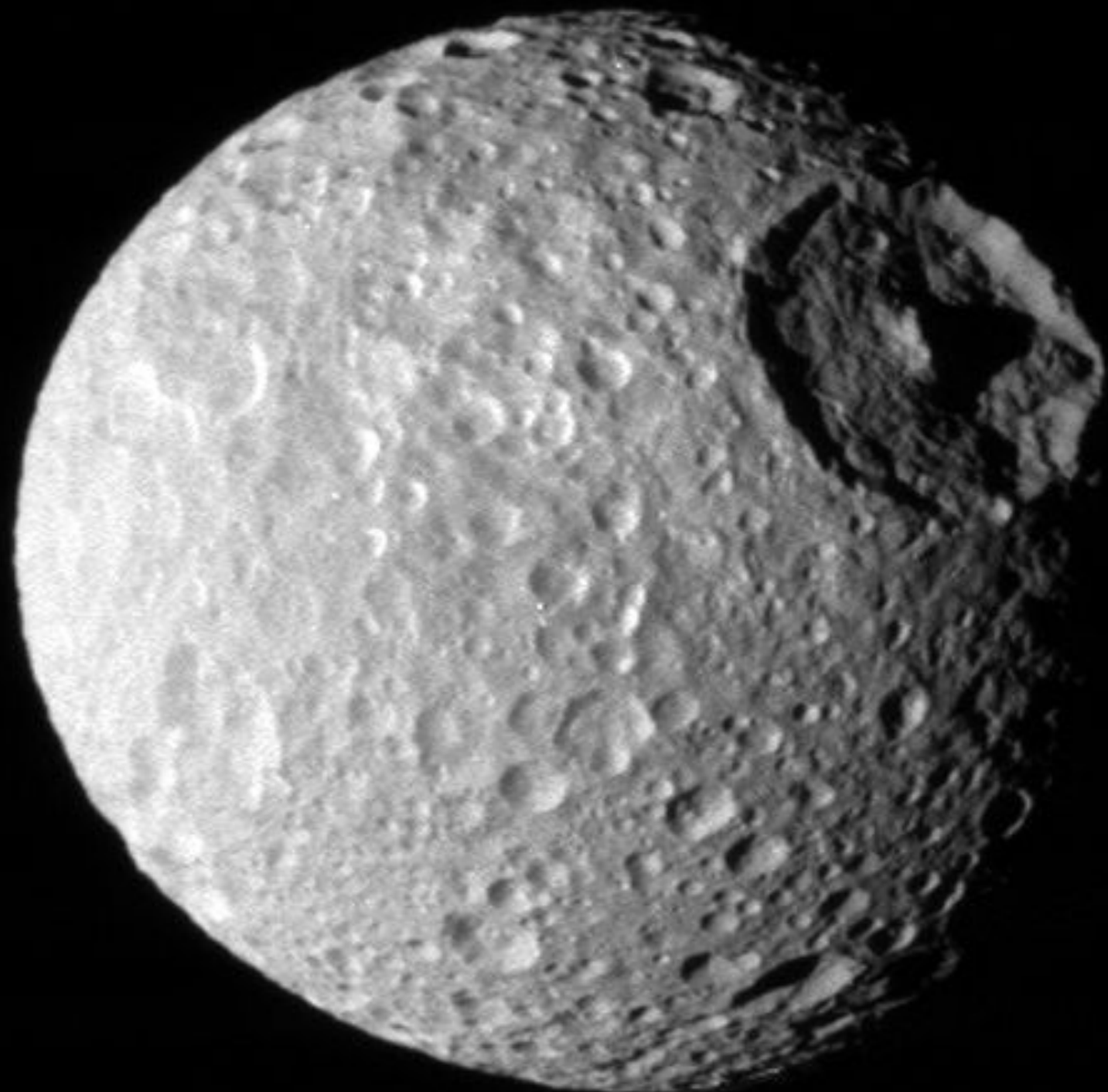




















Миранда



Ариэль



Умбриэль



Титания

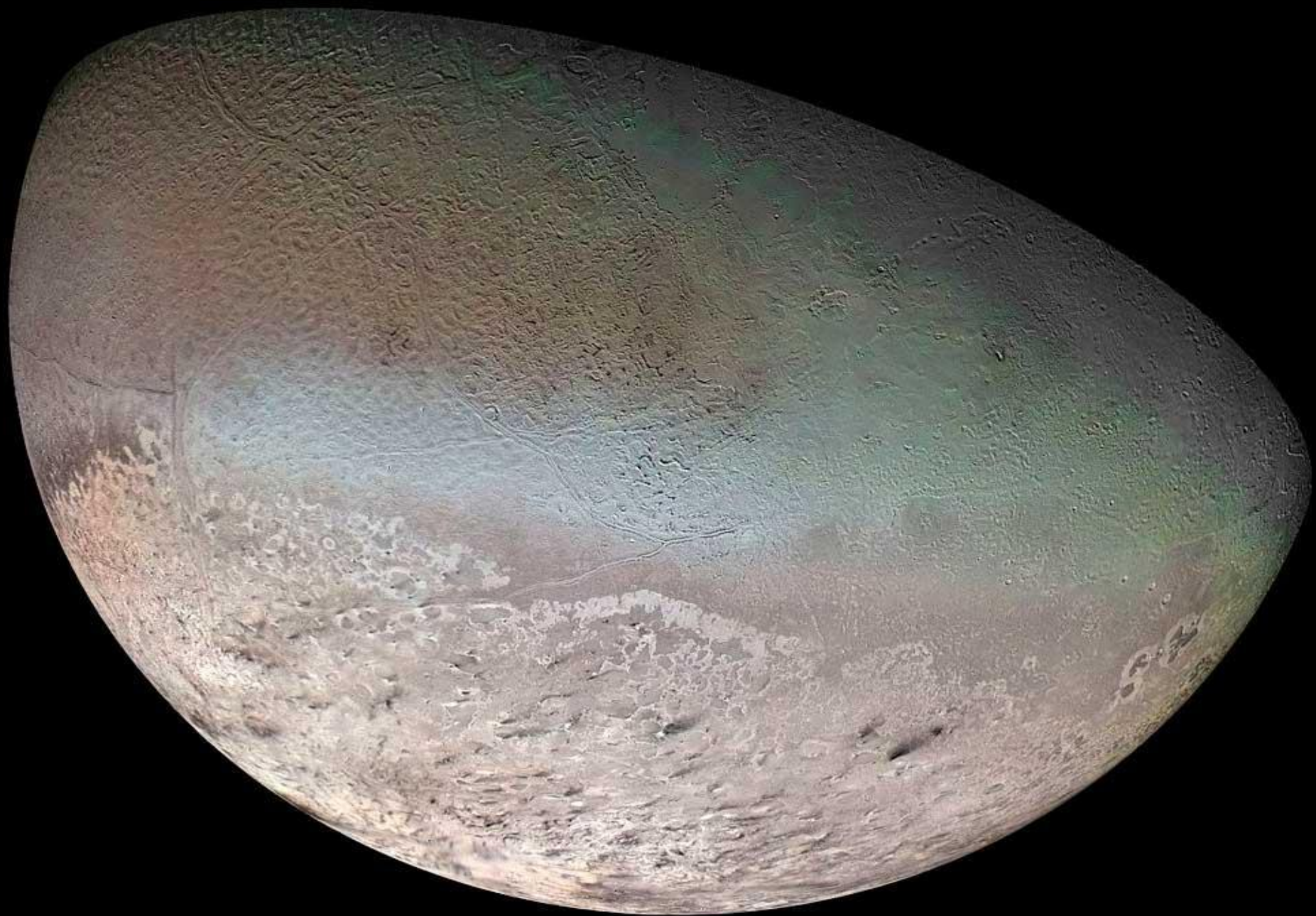


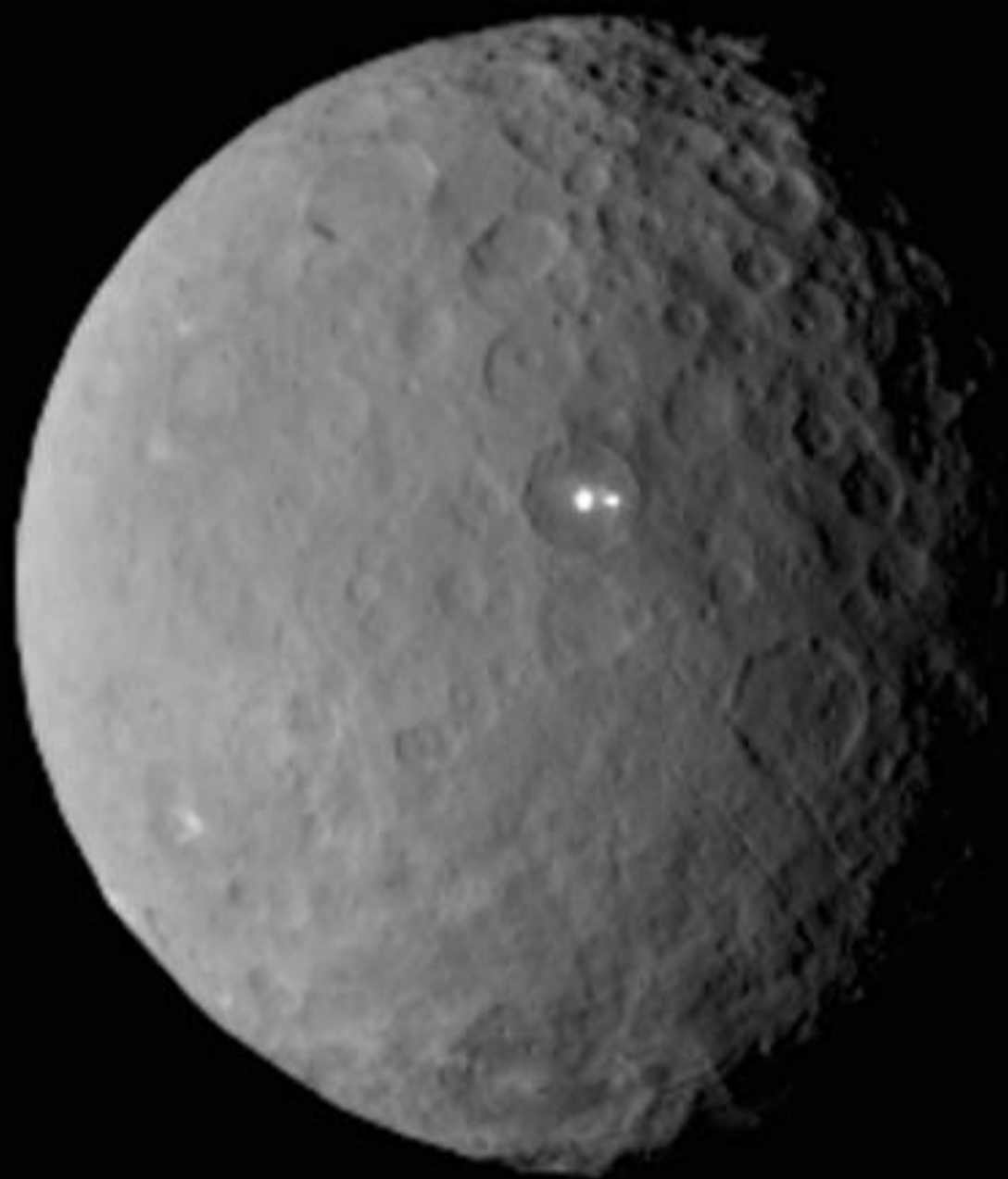
Оберон



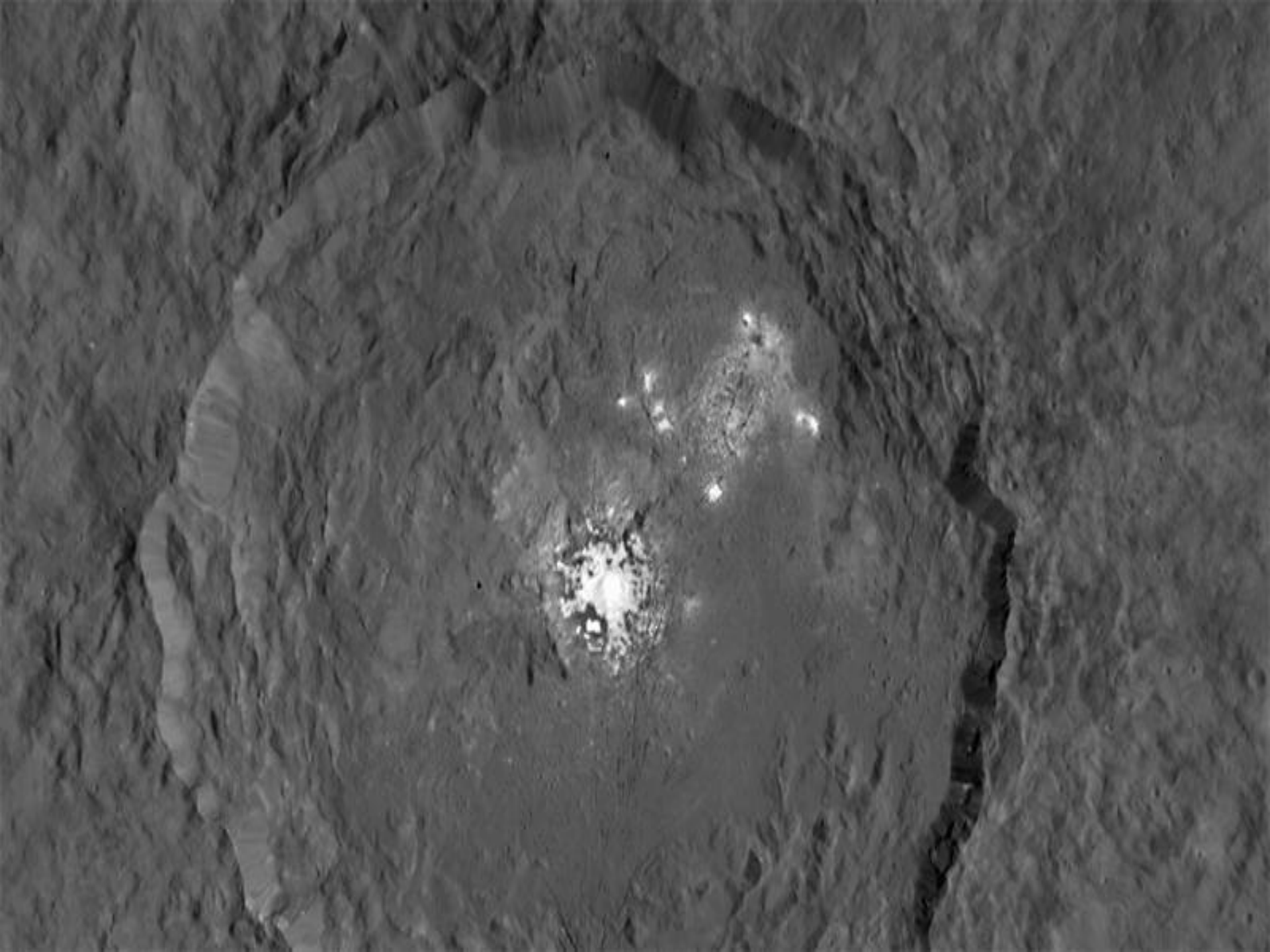


**Сравнение размеров Земли и Нептуна**

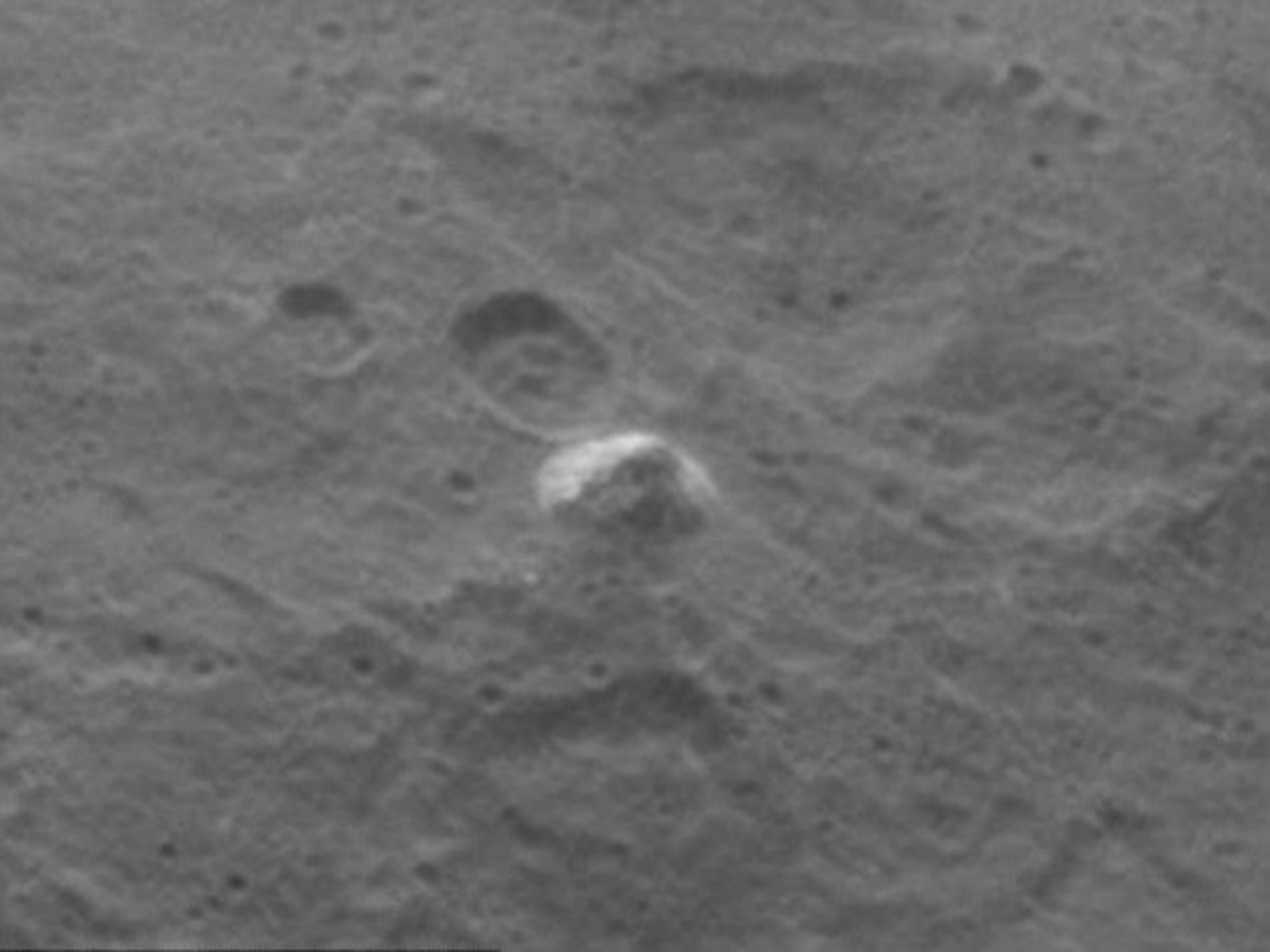








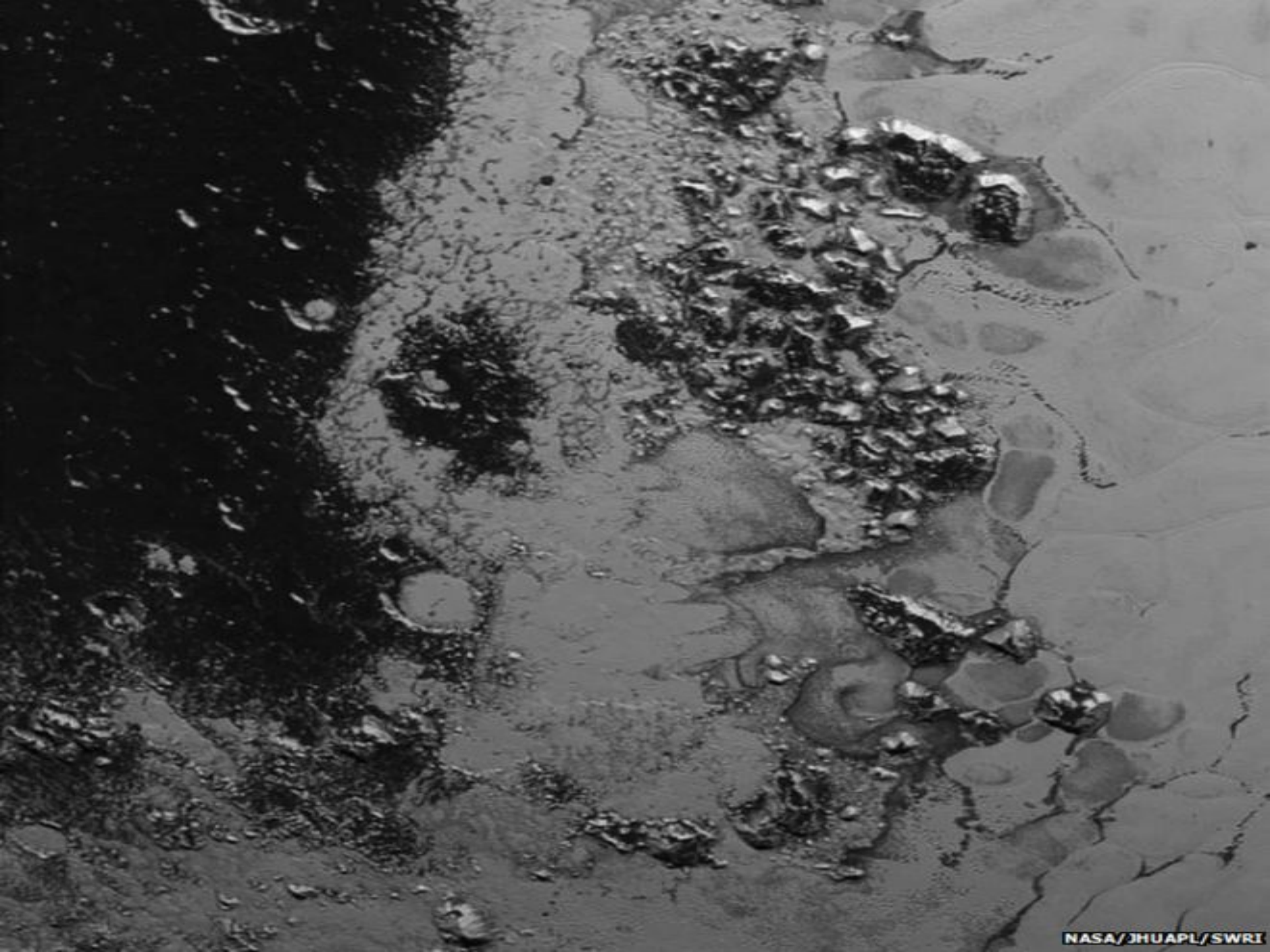




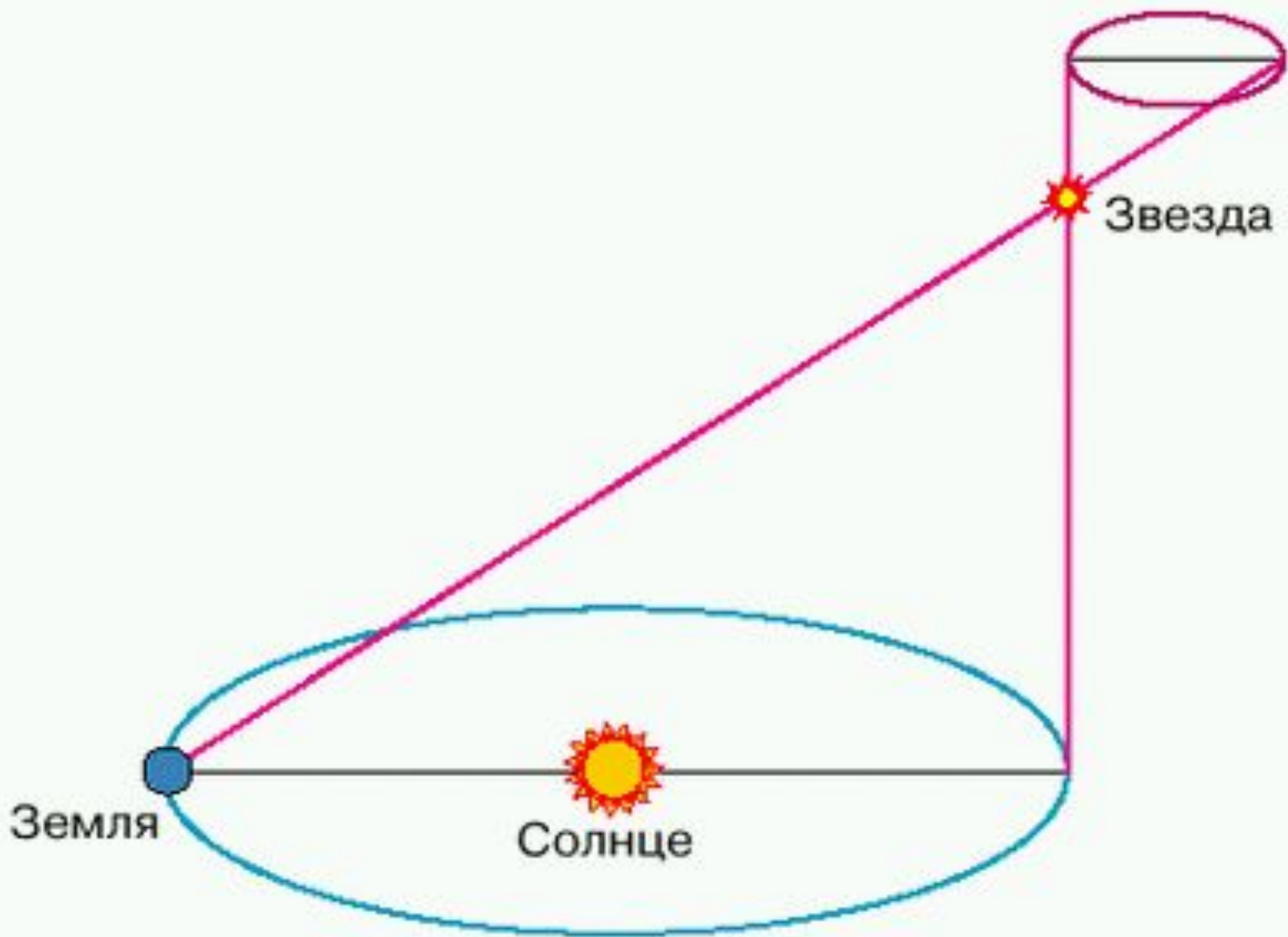




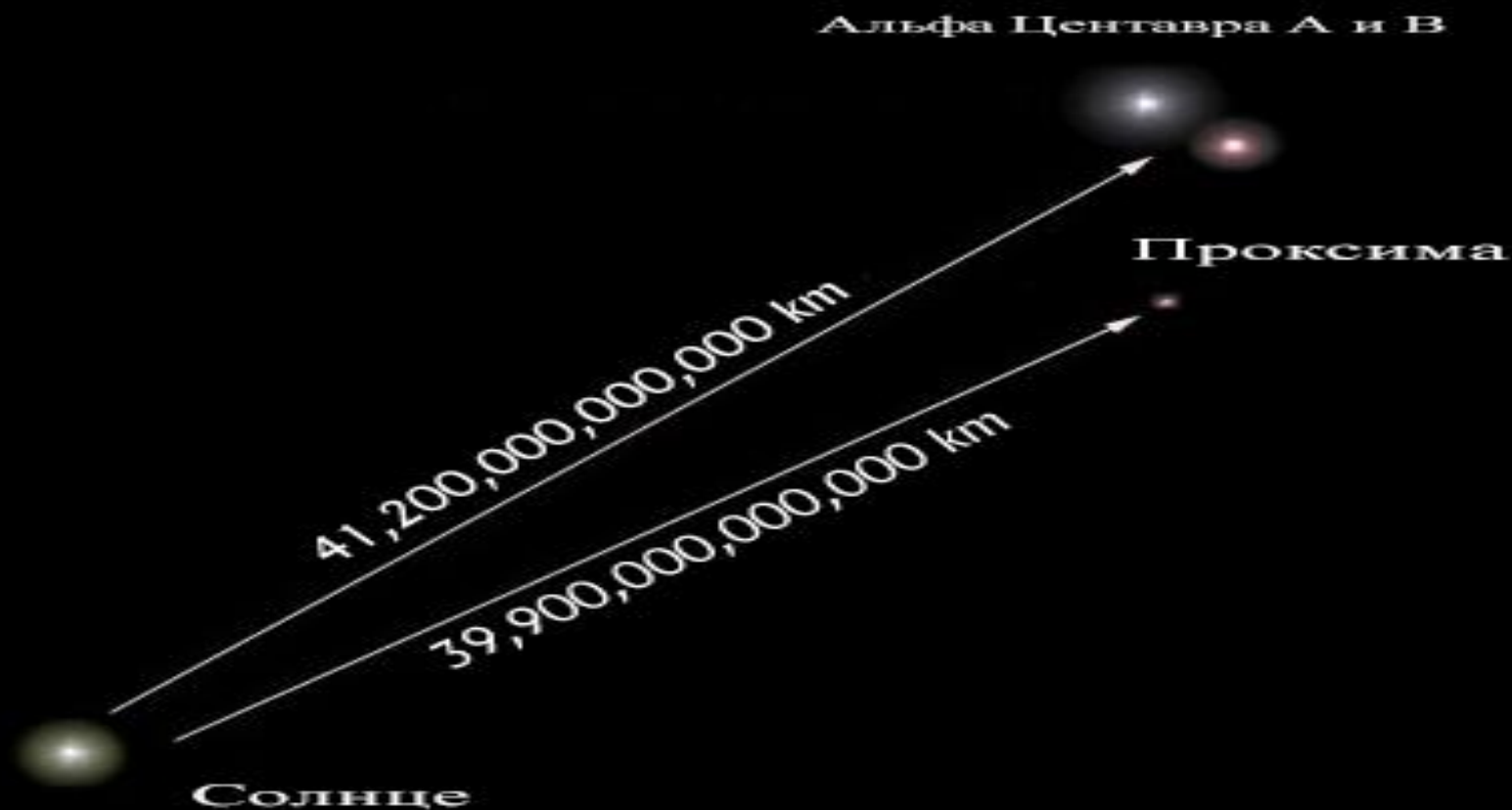




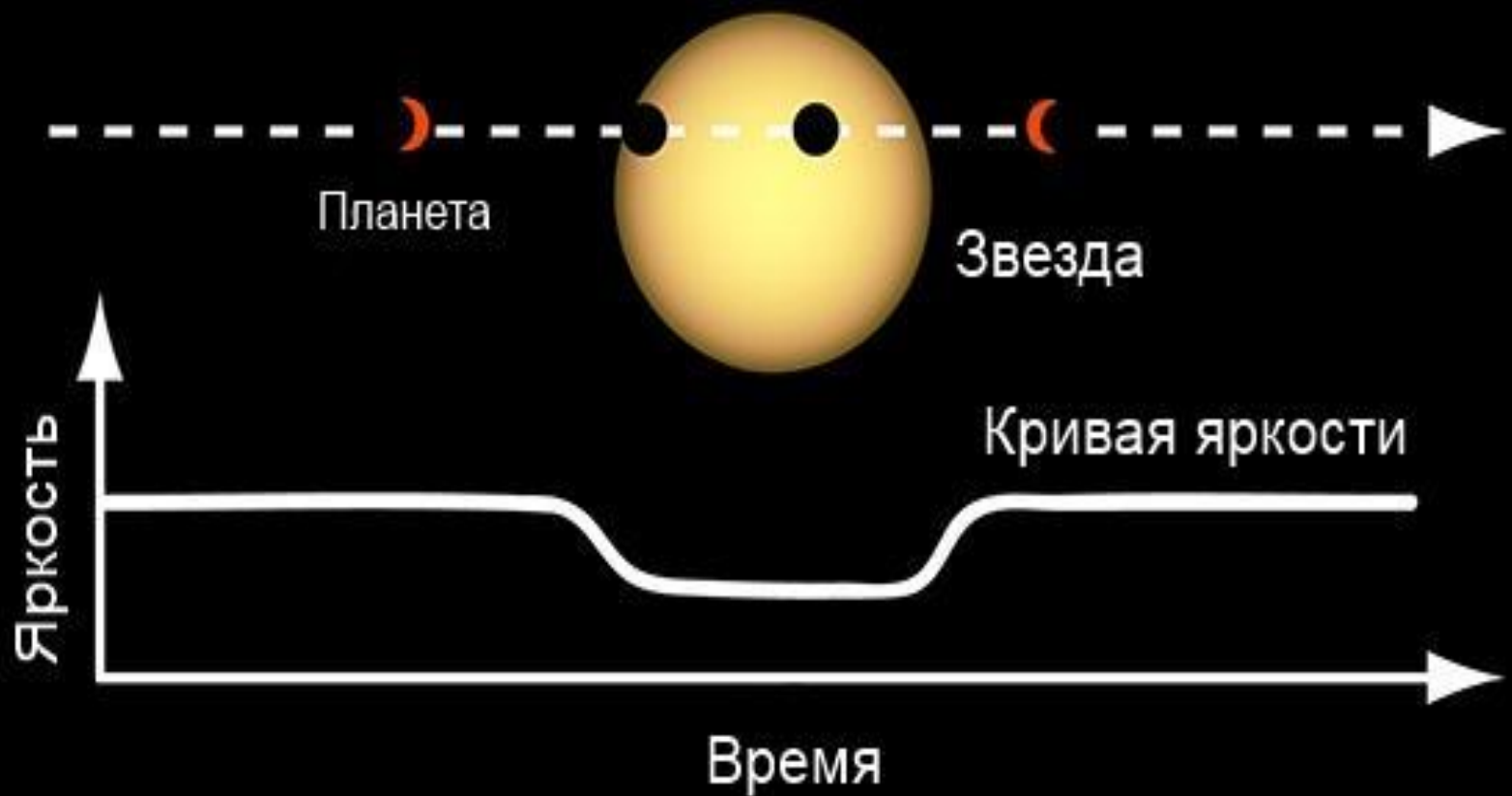




# 4,4 световых года до ближайшей звезды









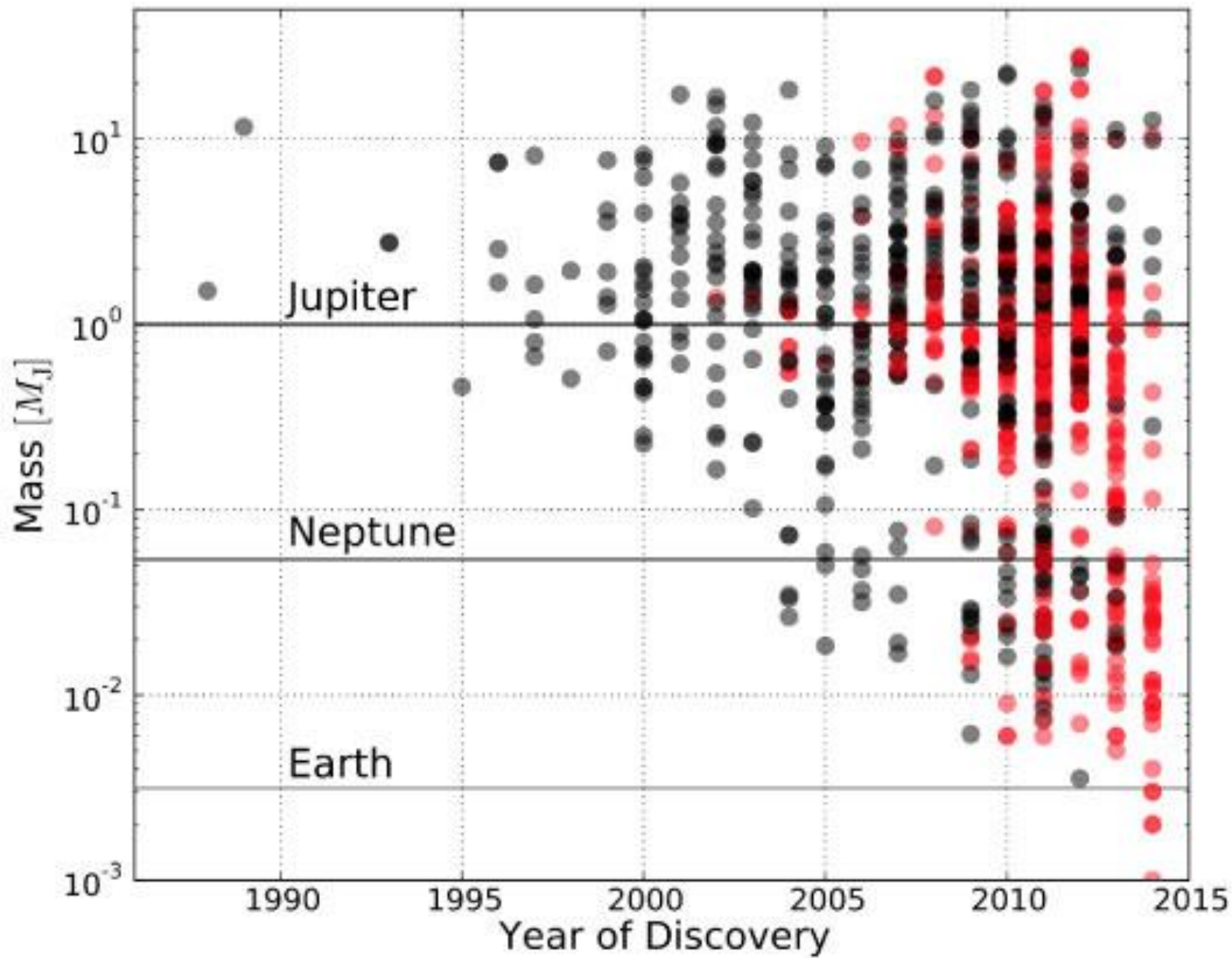


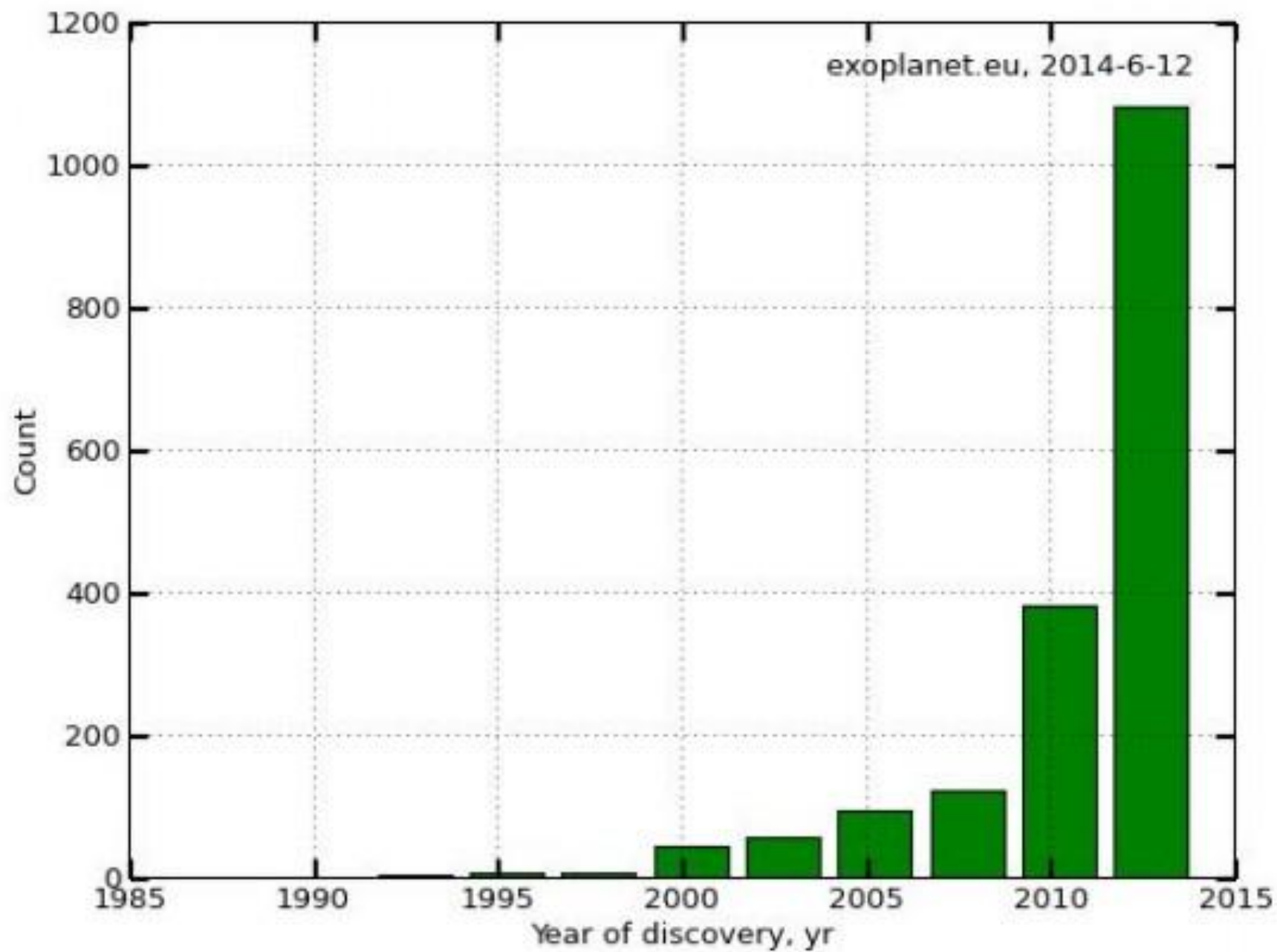
Красный карлик

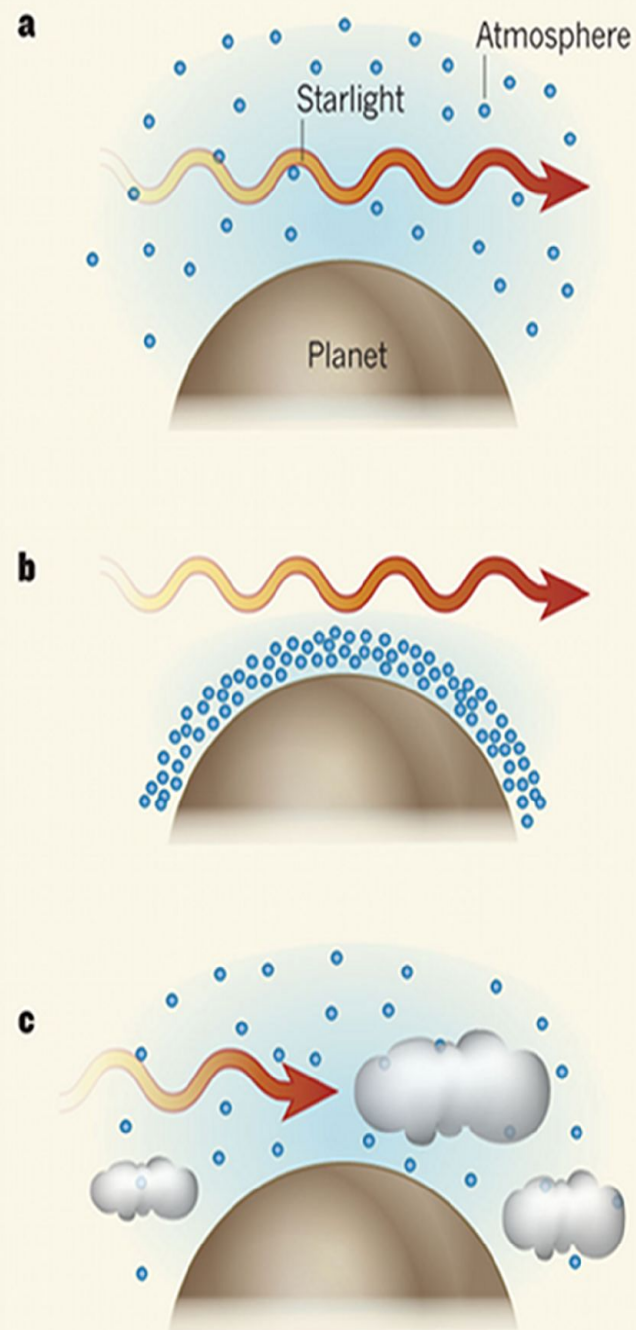
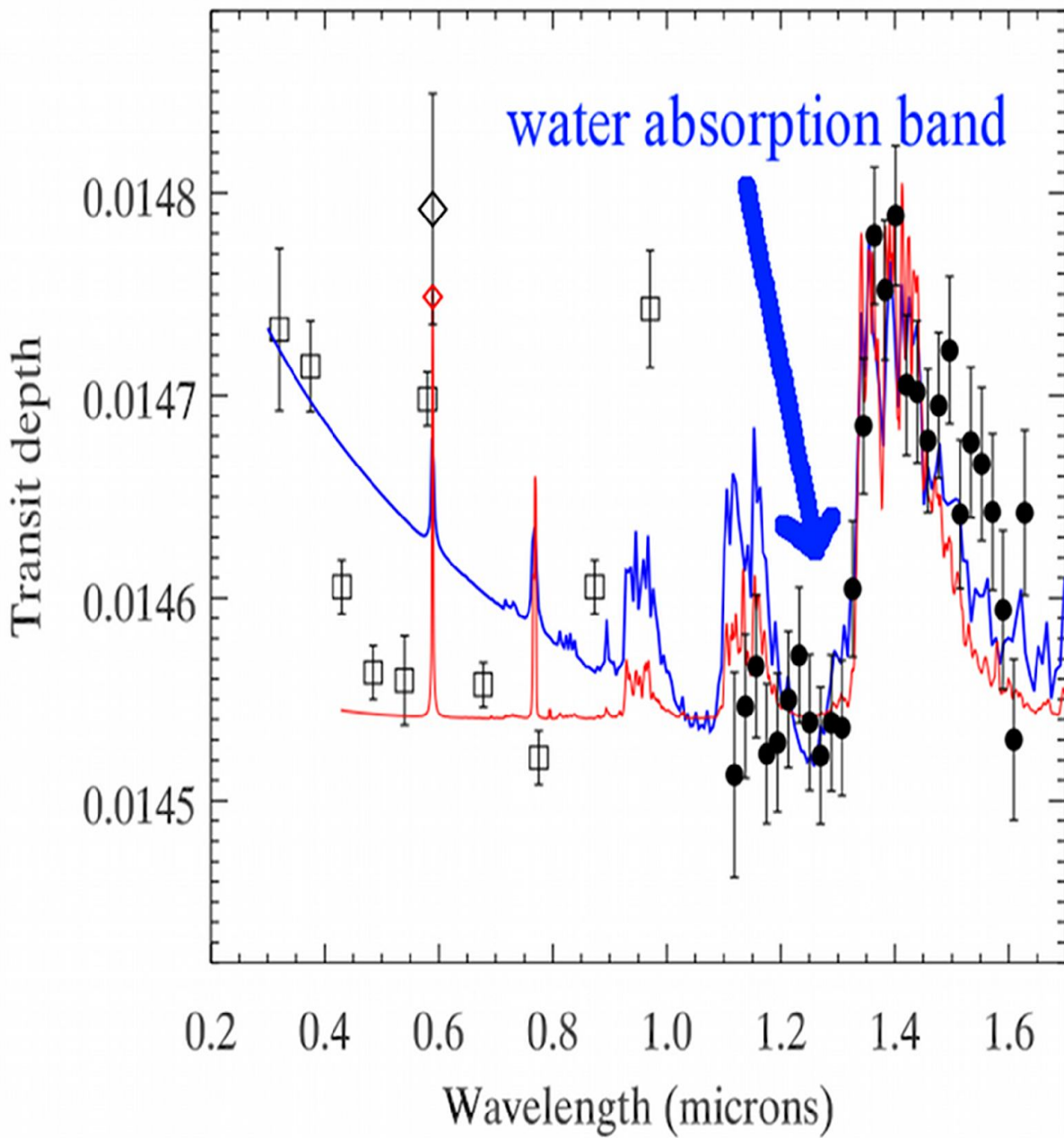
Желтый карлик  
(Солнце)

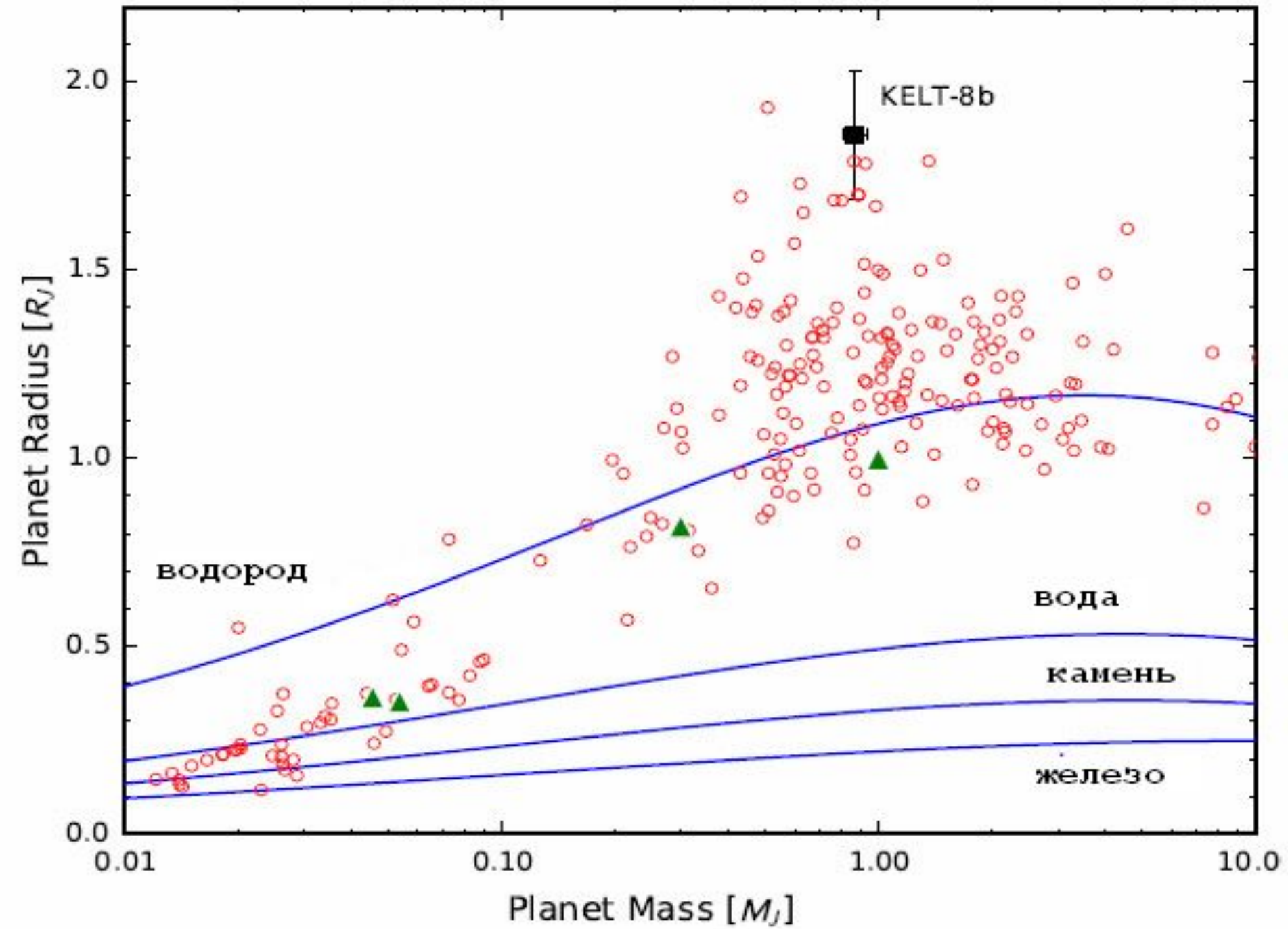
Голубой карлик

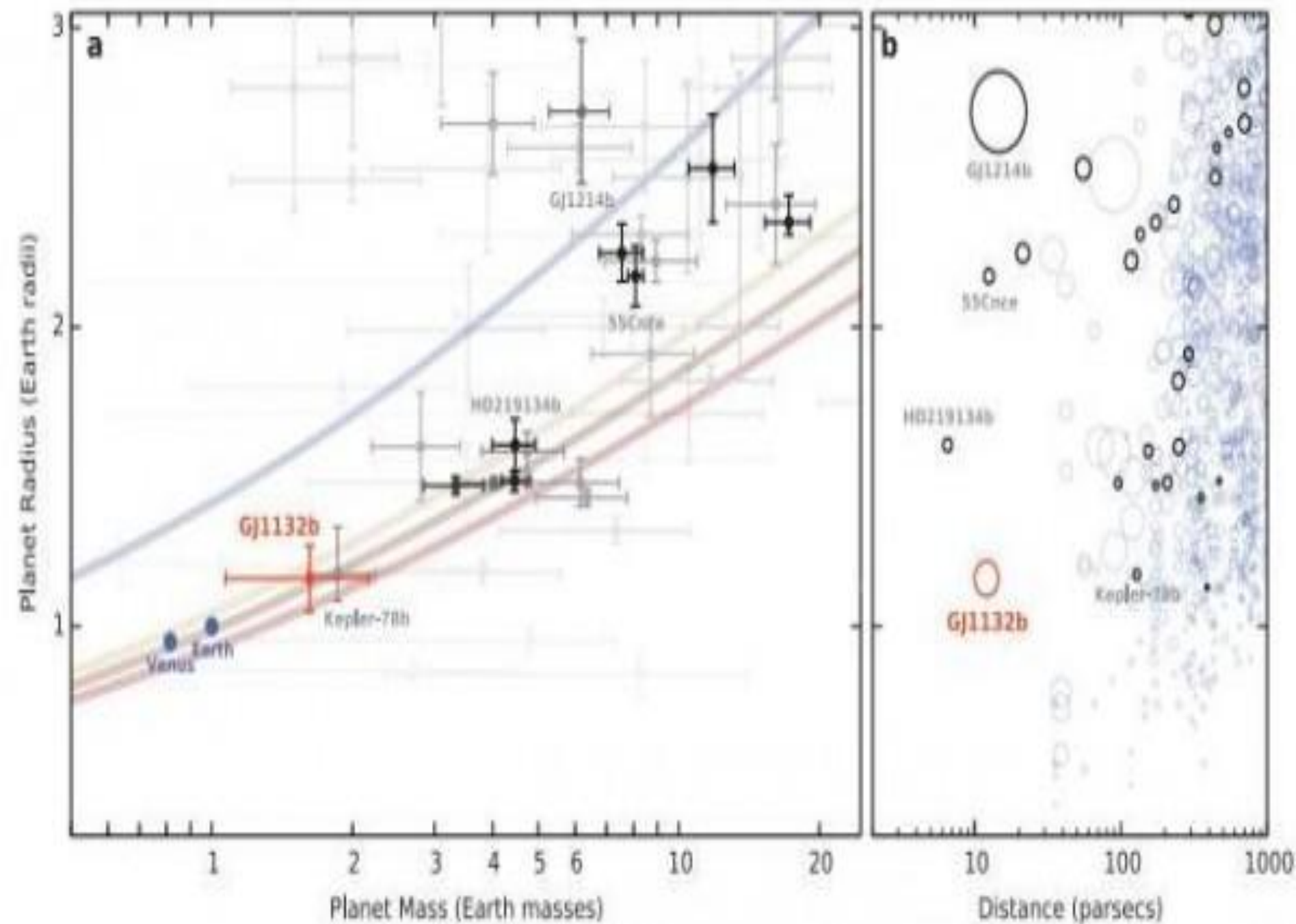
RMC136a1



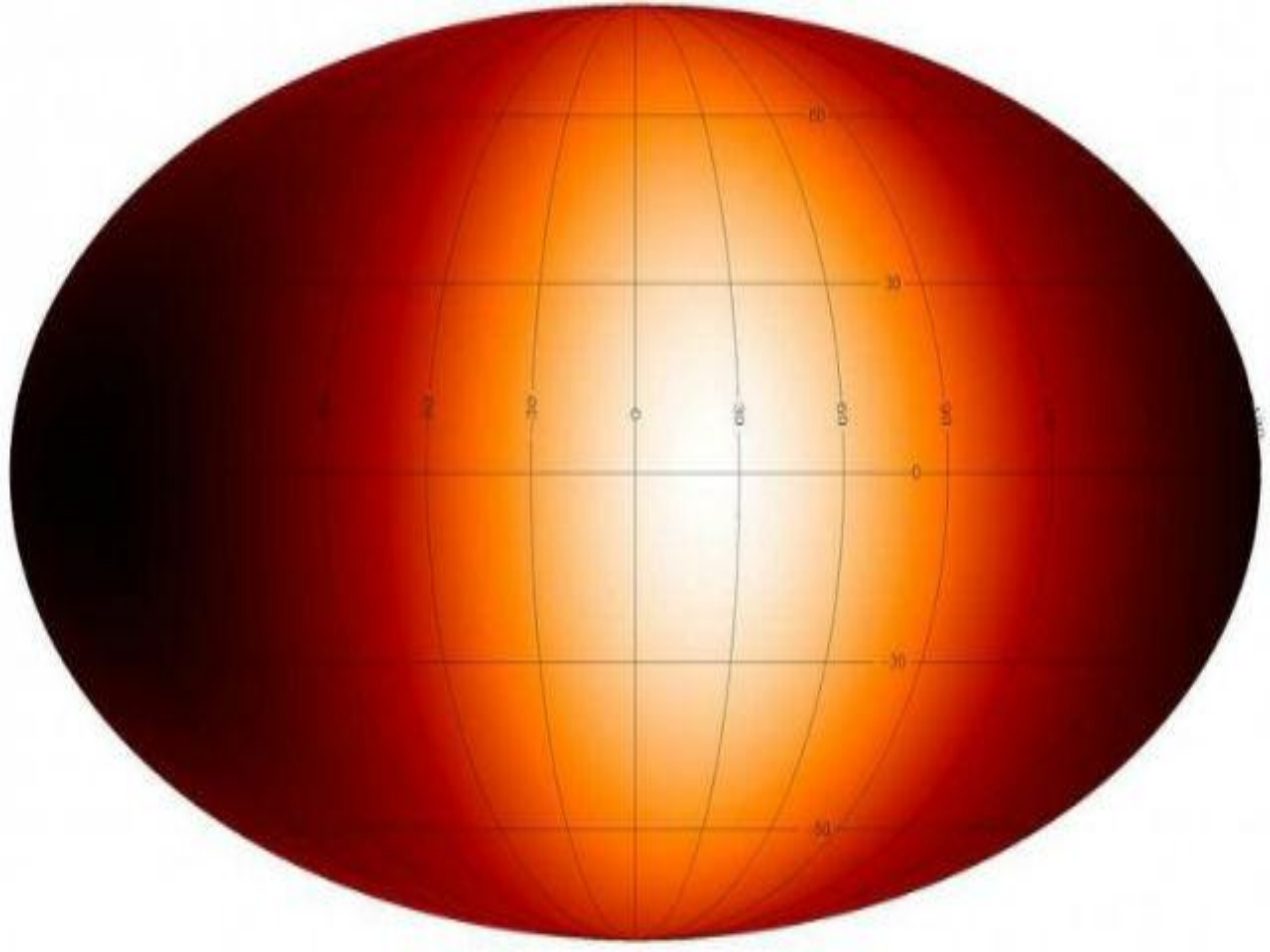




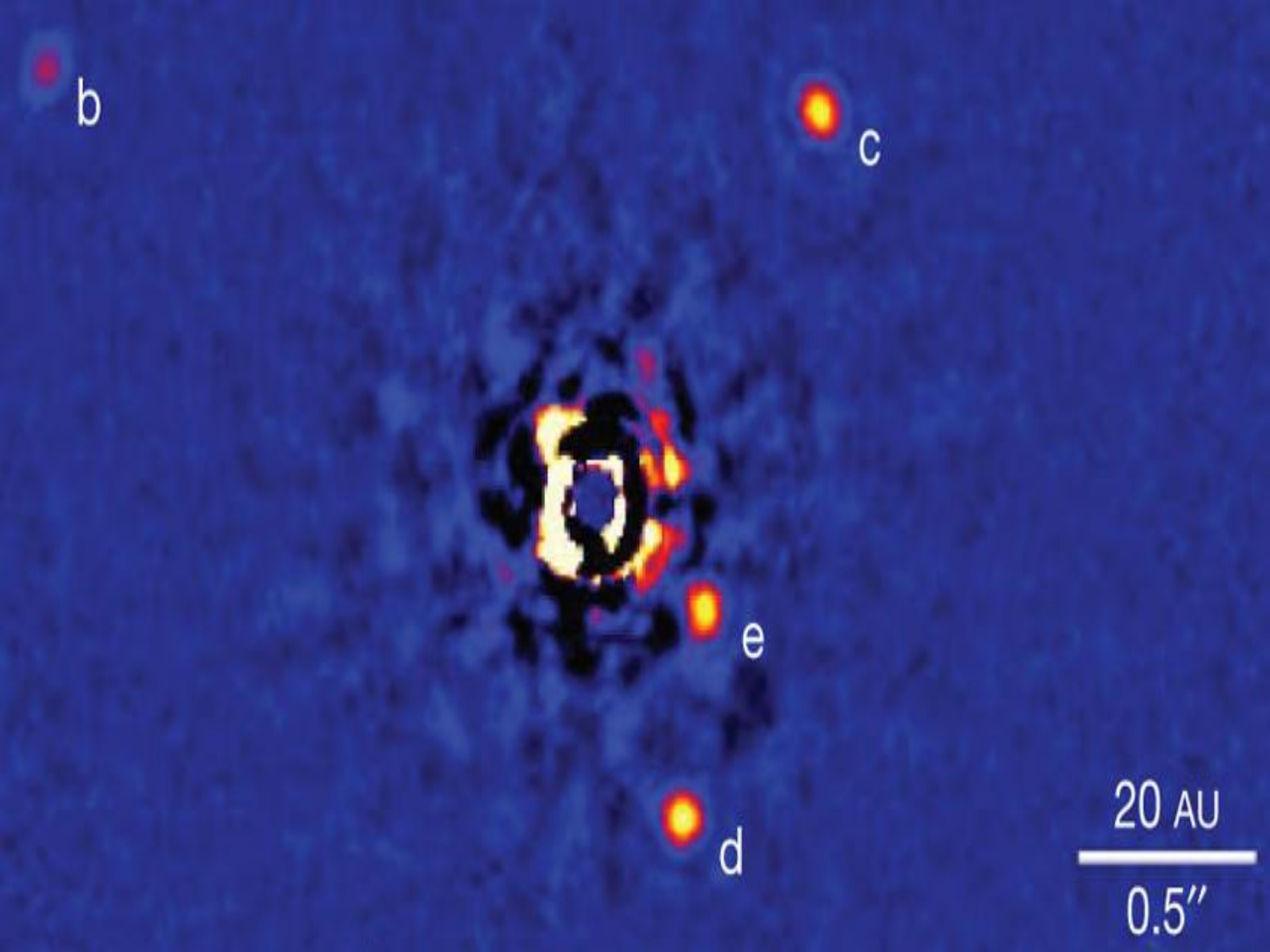












b

c

e

d

20 AU  
0.5"





**SDTV**  
720x480

24x pixel density

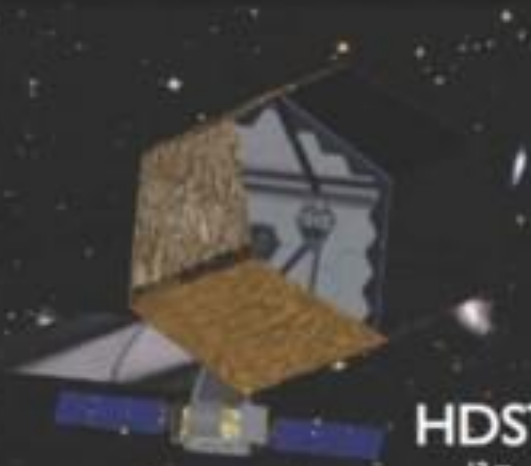


**UltraHD**  
3820x2160

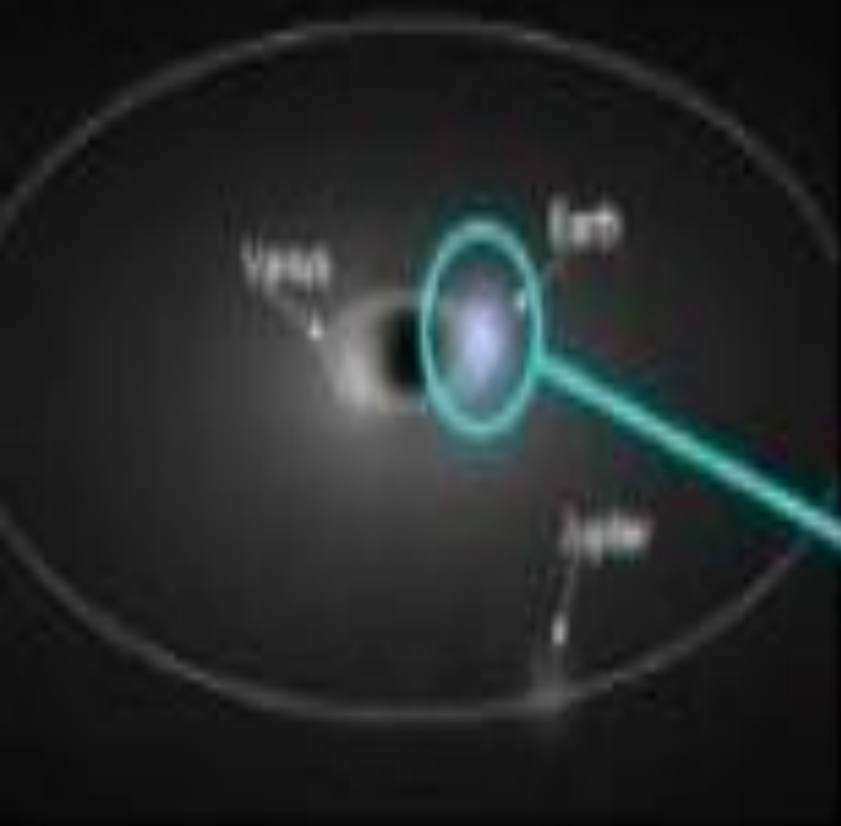


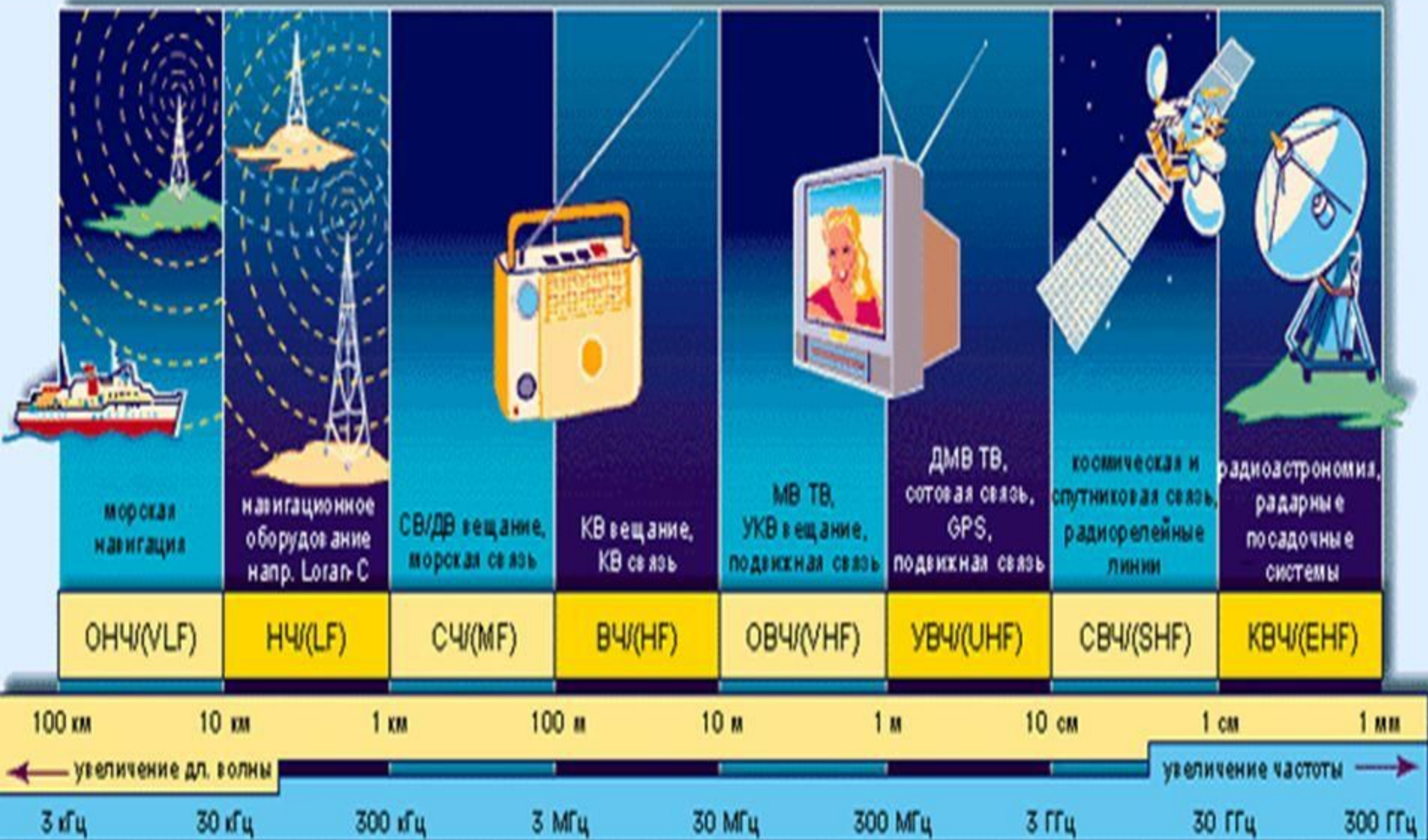
**HST**  
2.4 m

24x image sharpness



**HDST**  
12 m





# Отправленные межзвёздные радиопослания

1. Аресибское послание,  
16 ноября 1974 года



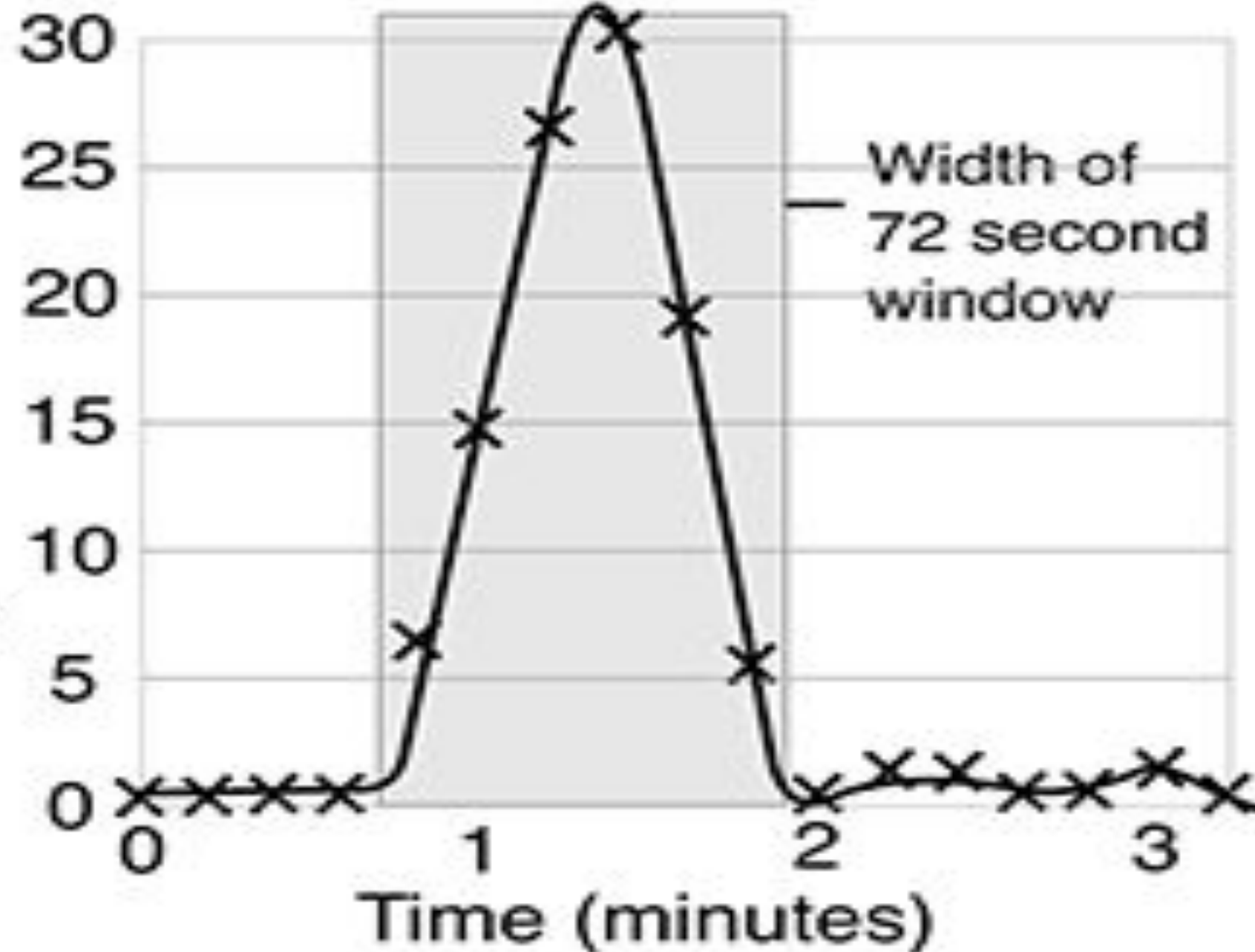
2. Cosmic Call 1999, пять сеансов излучения
3. Teen Age Message 2001, шесть сеансов
4. Cosmic Call 2003, пять сеансов
5. A Message From Earth 2008





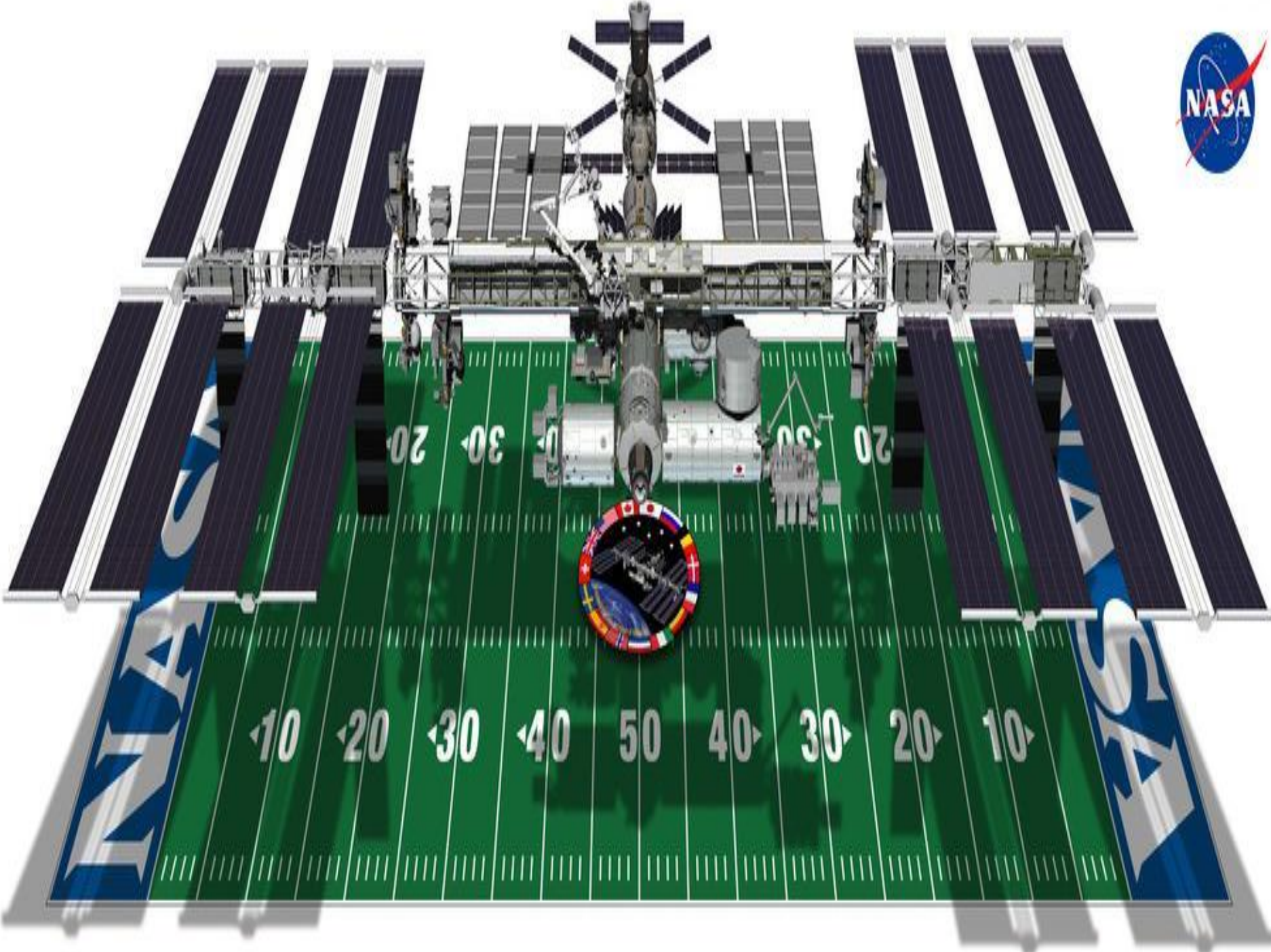
6 EQUJ 5

Signal to noise ratio

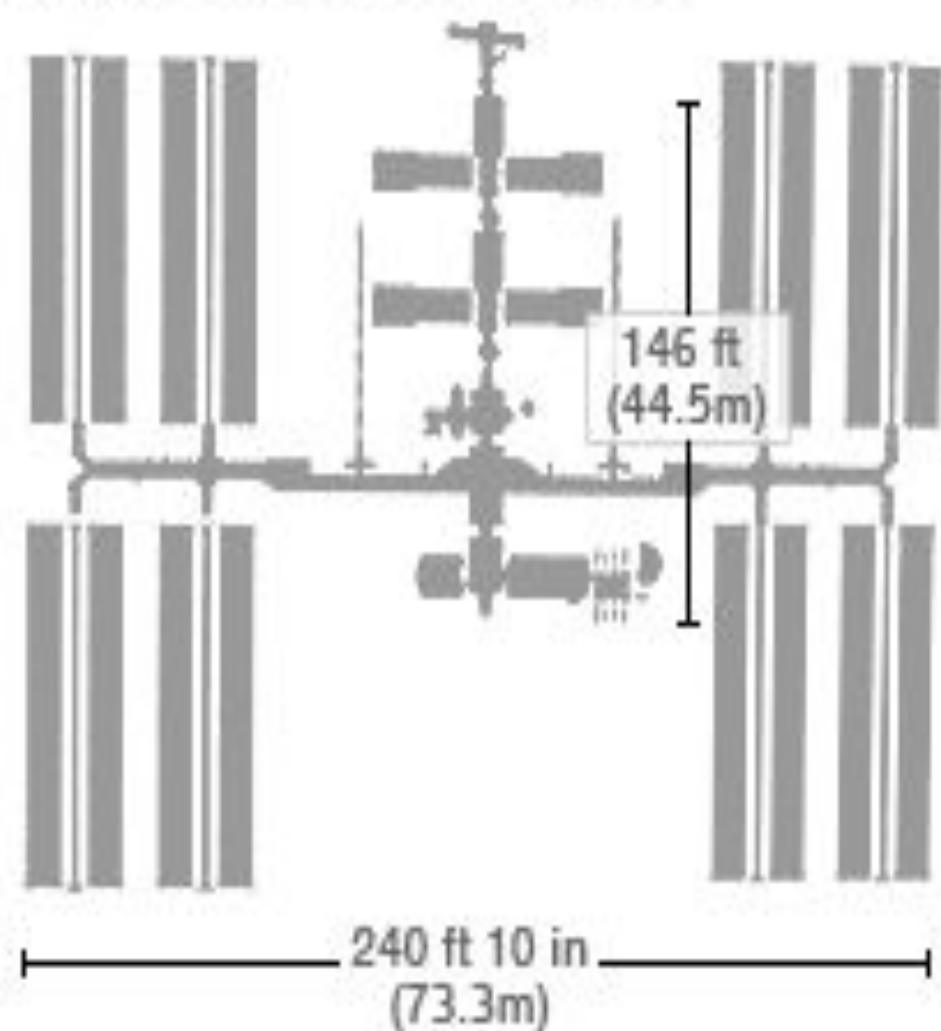




S130E012016

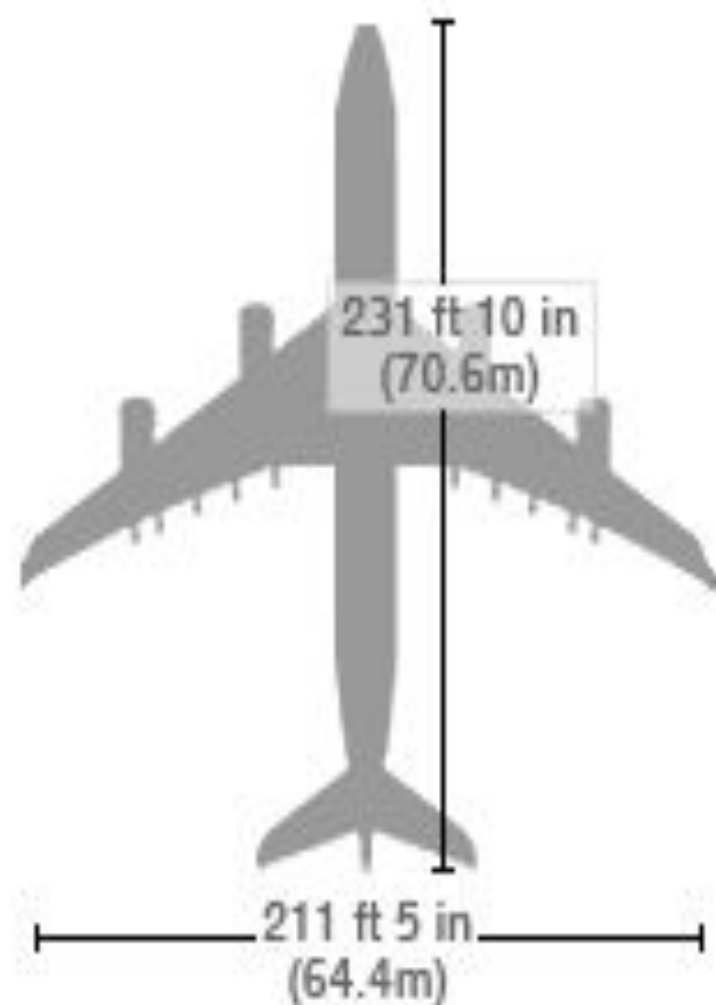


## INTERNATIONAL SPACE STATION

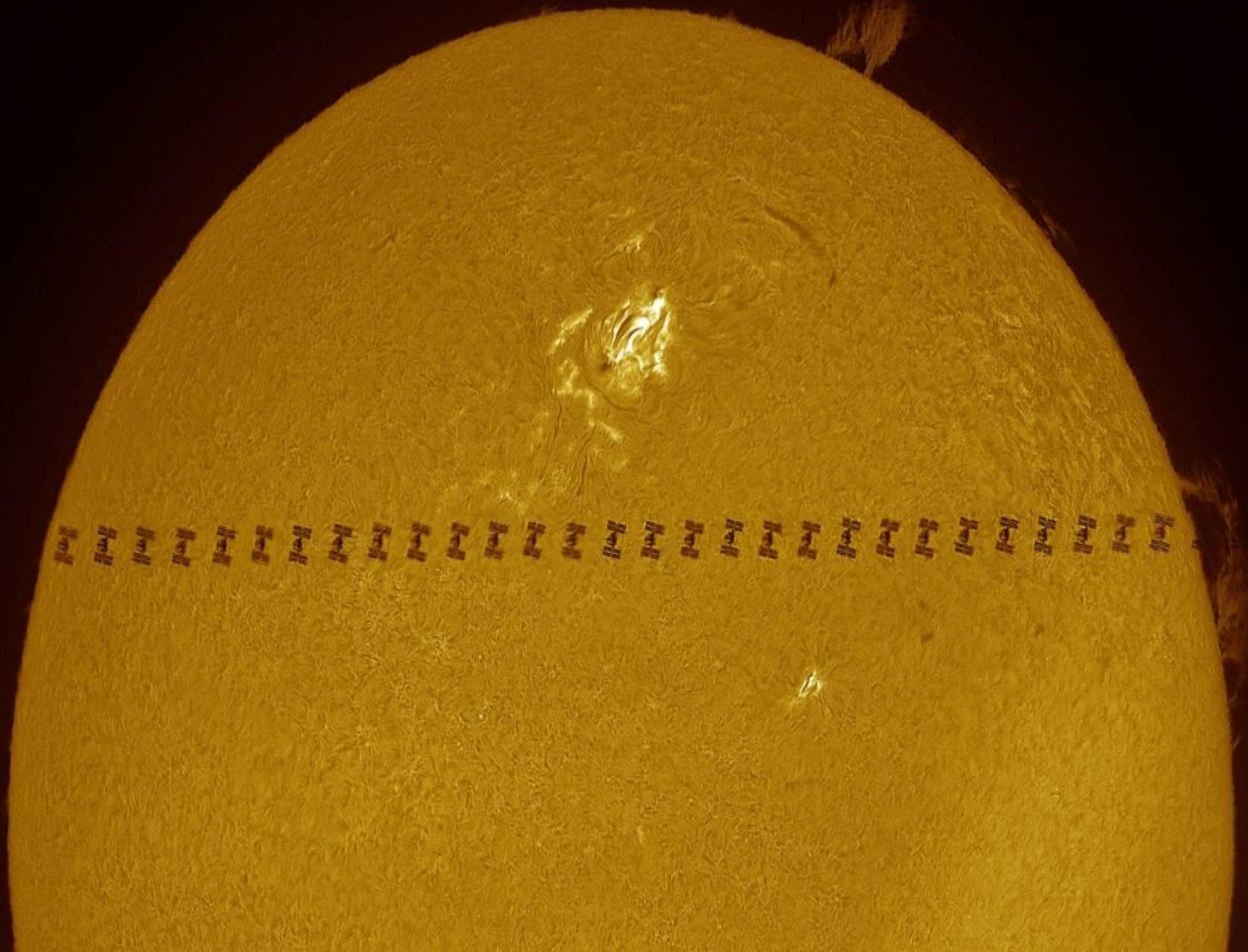


Current habitable space:  
15,000 cubic ft (projected to double  
on completion)

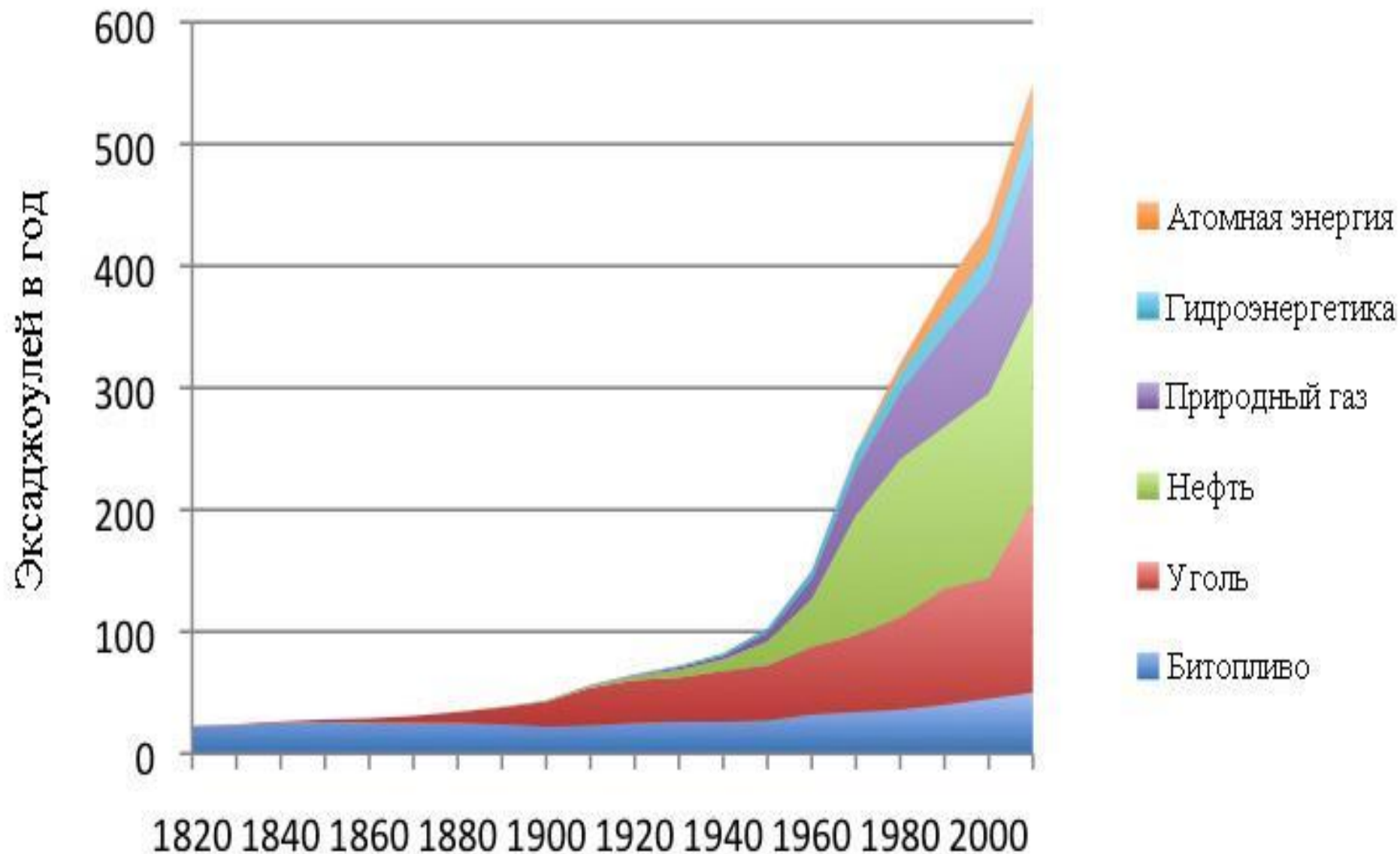
## BOEING 747



Interior passenger volume:  
31,295 cubic ft



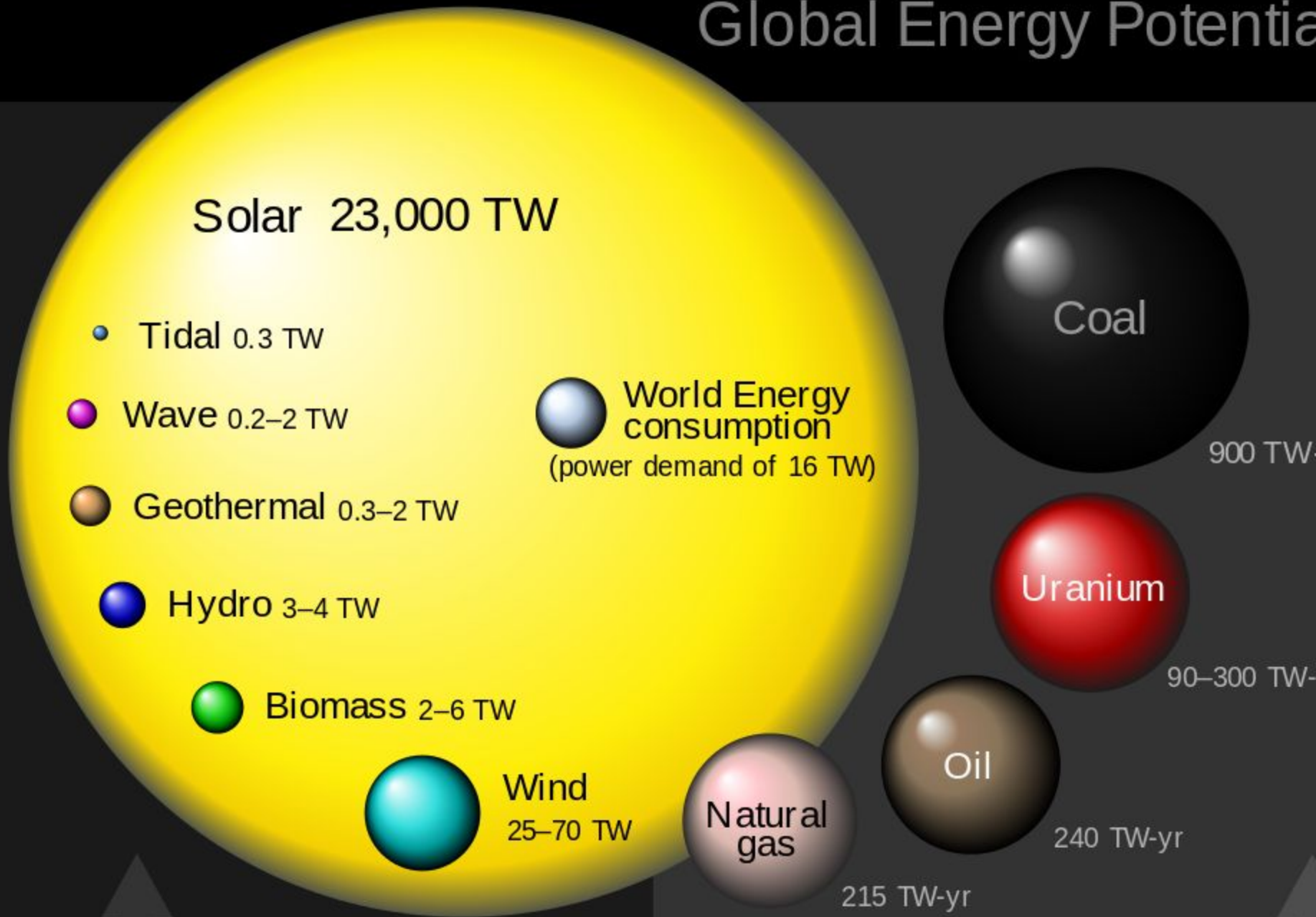
# Потребление энергии в мире

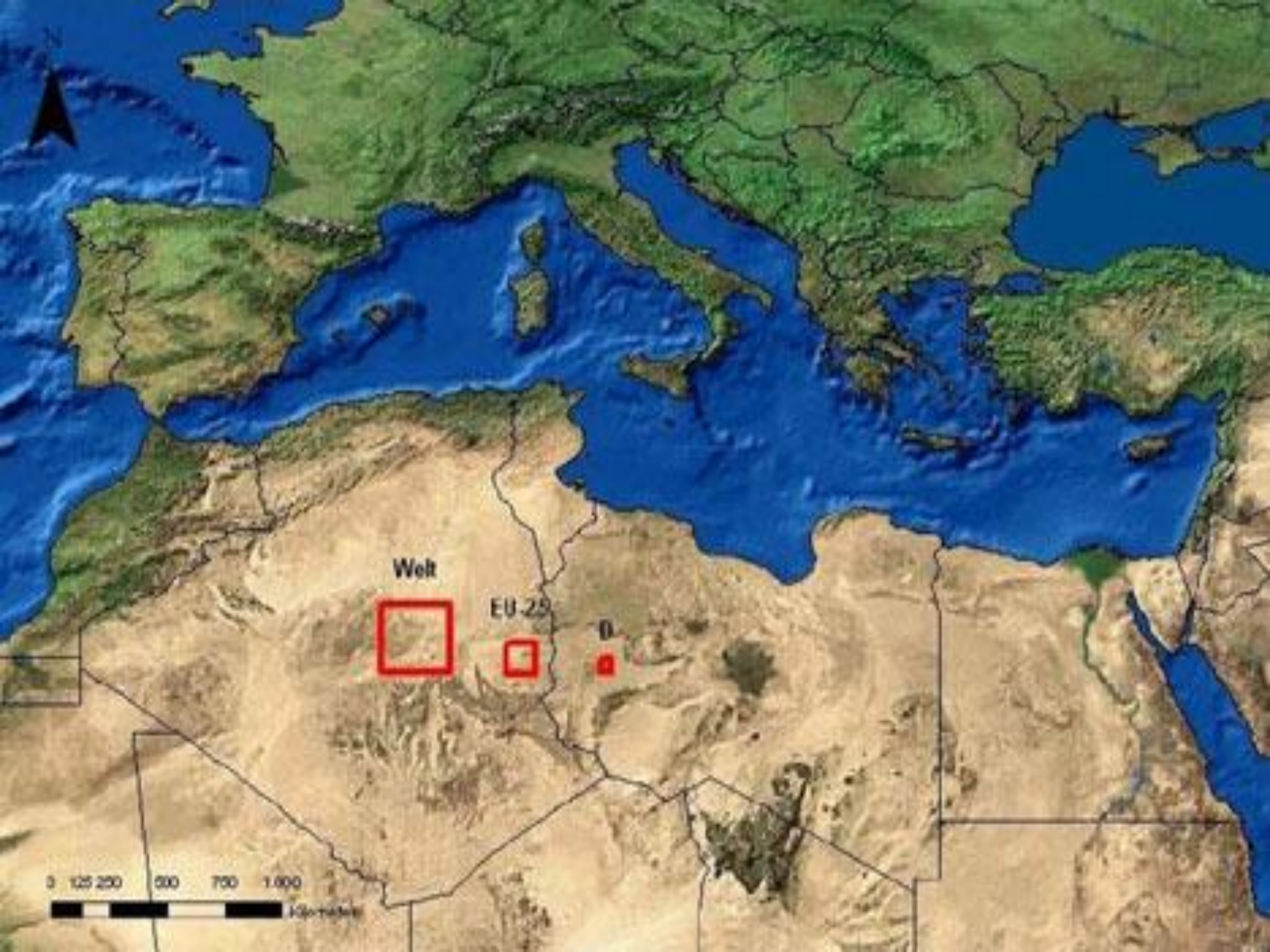






# Global Energy Potential





Welt

EU-25

D

0 125 250 500 750 1.000  
Kilometer



