

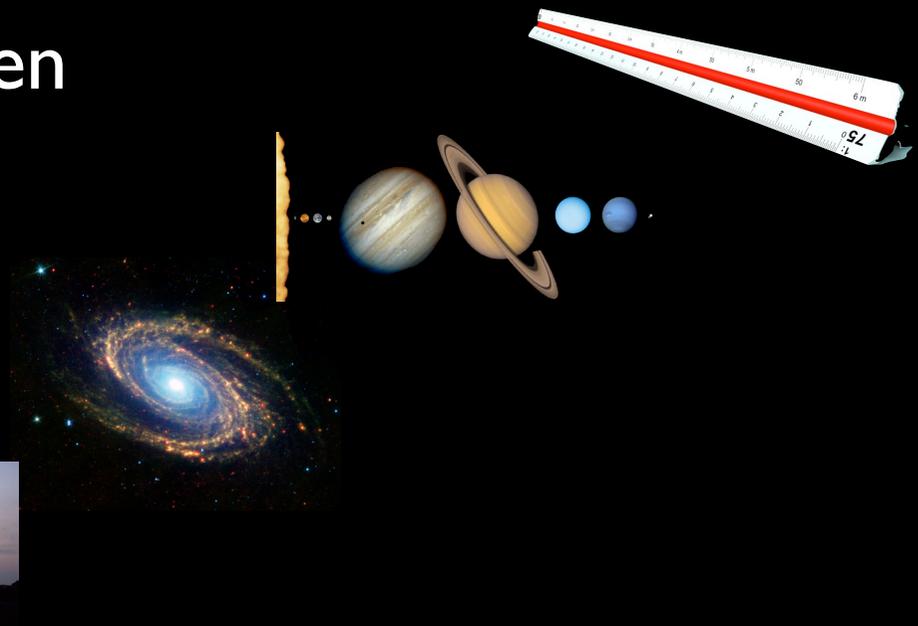
Astronomie

Ralf Klessen

Zentrum für Astronomie der Universität Heidelberg

Übersicht

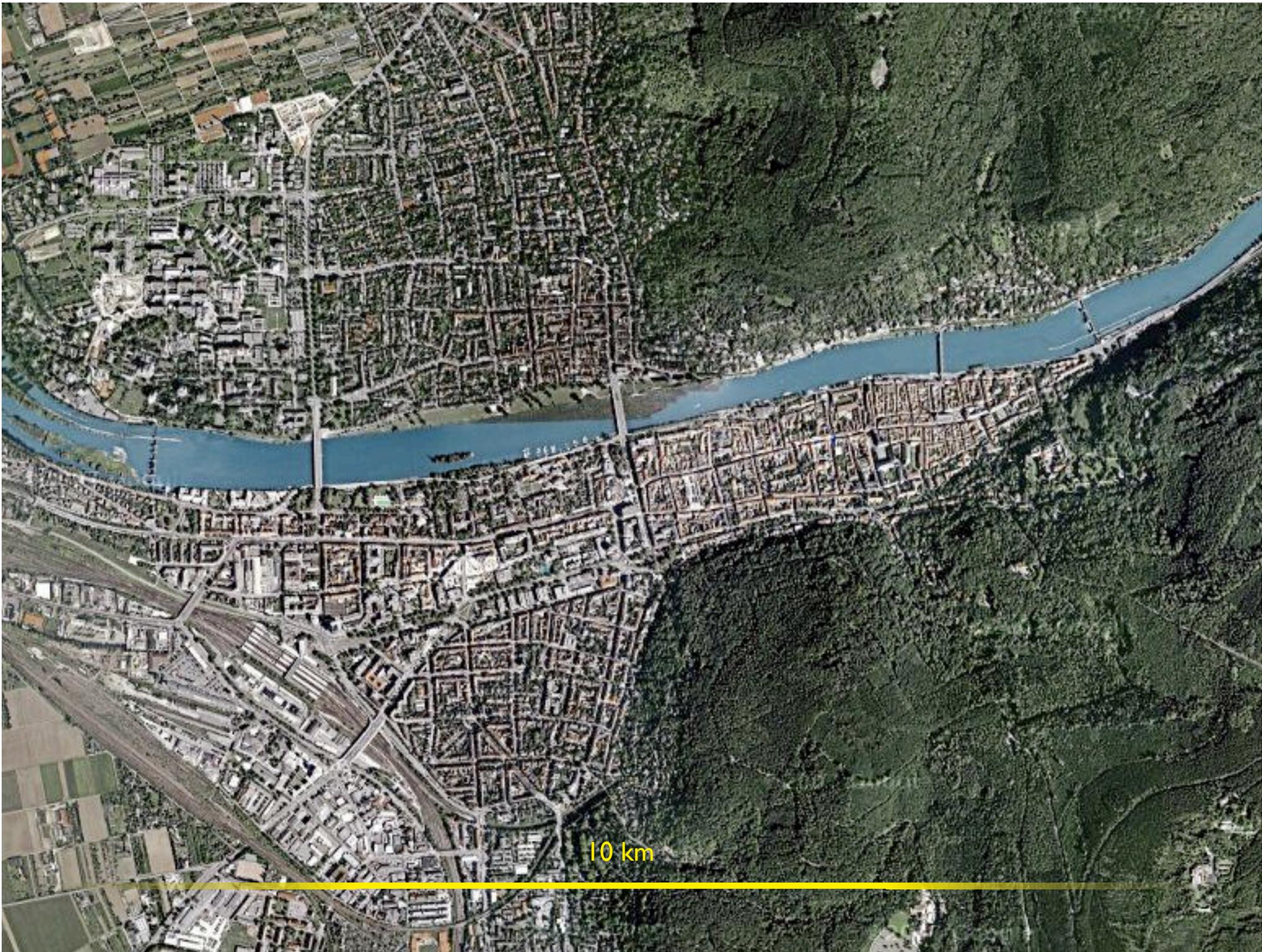
- Astronomische Skalen
- Sonne und Planeten
- Milchstraße
- Teleskope



Astronomische Skalen

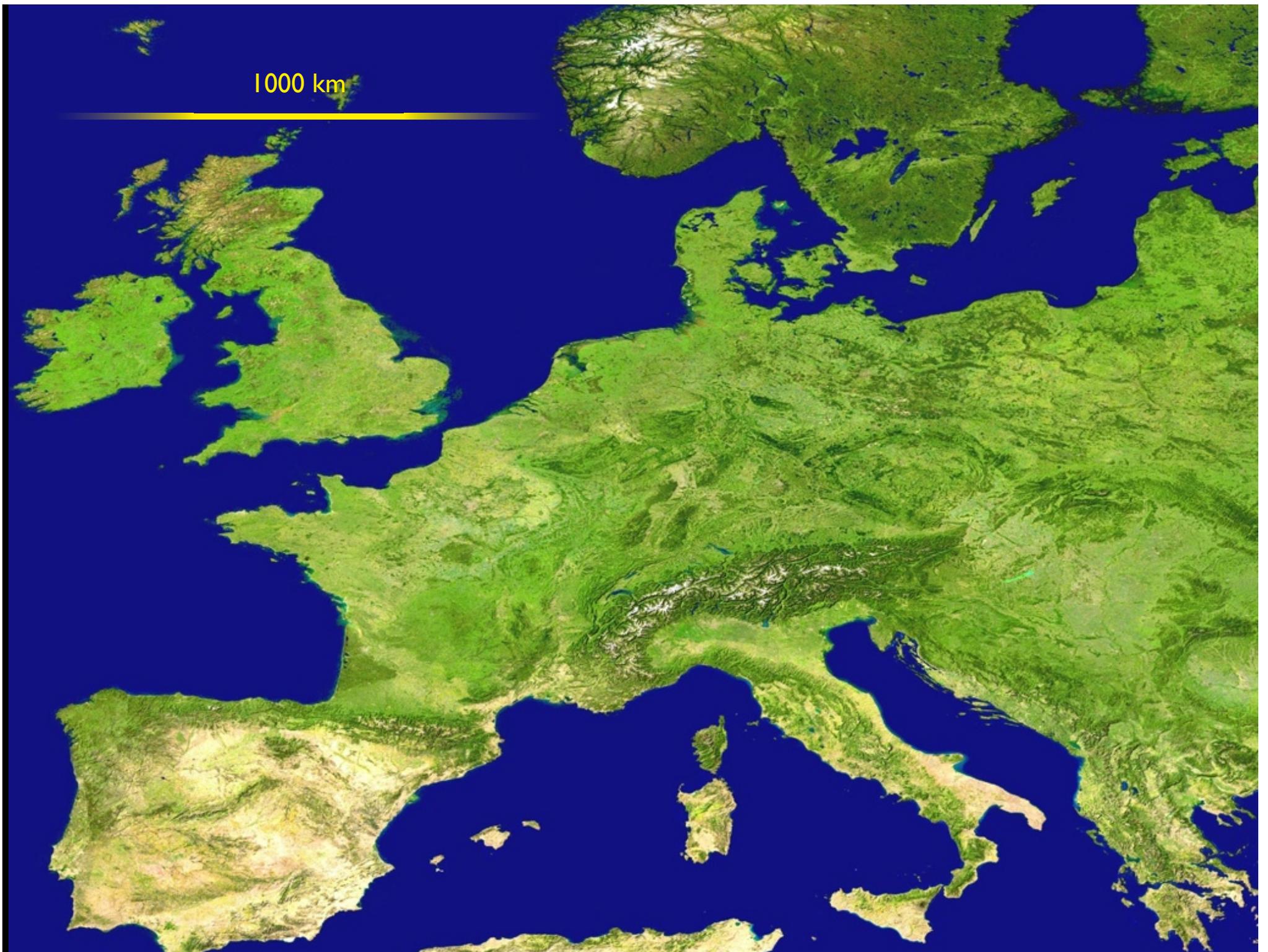
100 m





10 km

1000 km



10.000 km

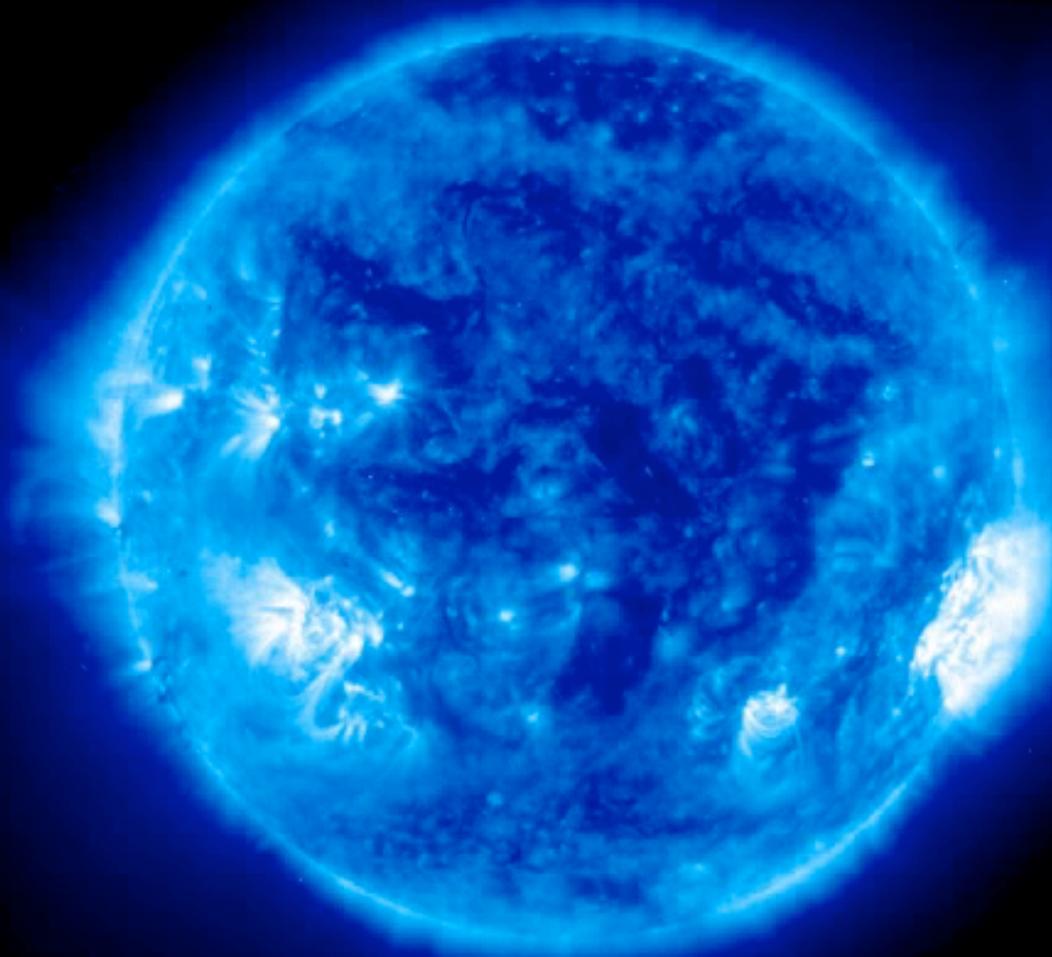




100.000 km

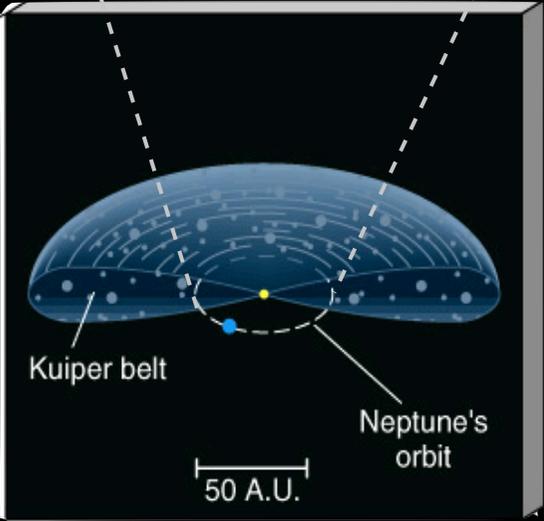
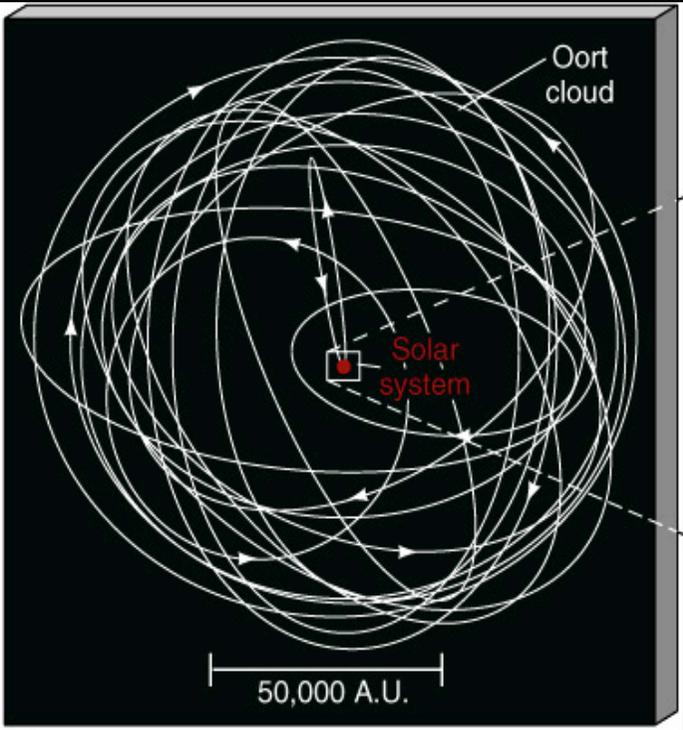
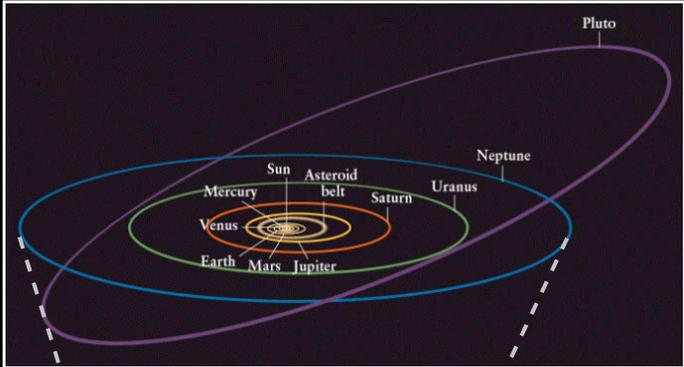


1.000.000 km



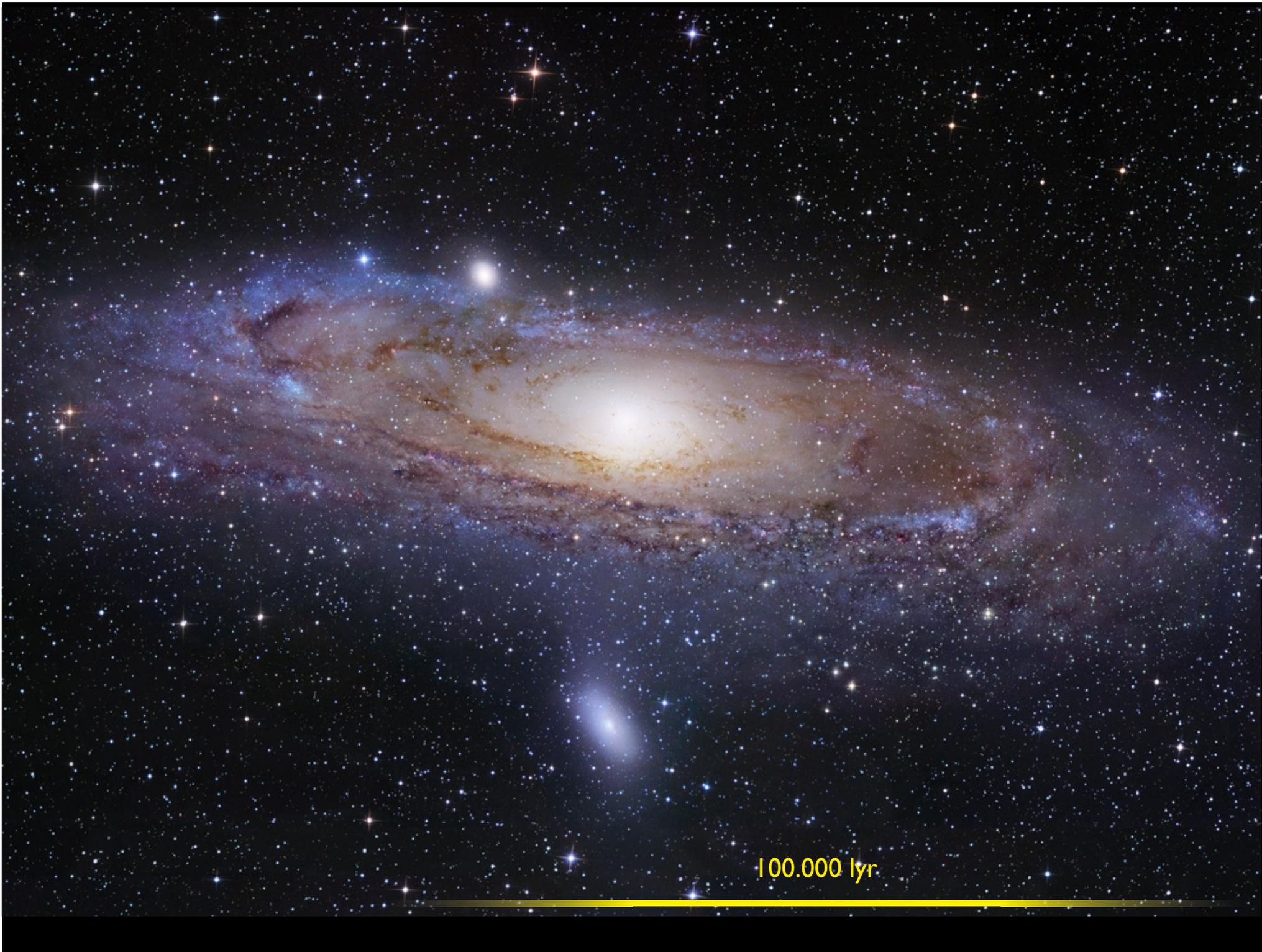
2003/08/12 13:00

10.000.000.000.000 km



10 lyr

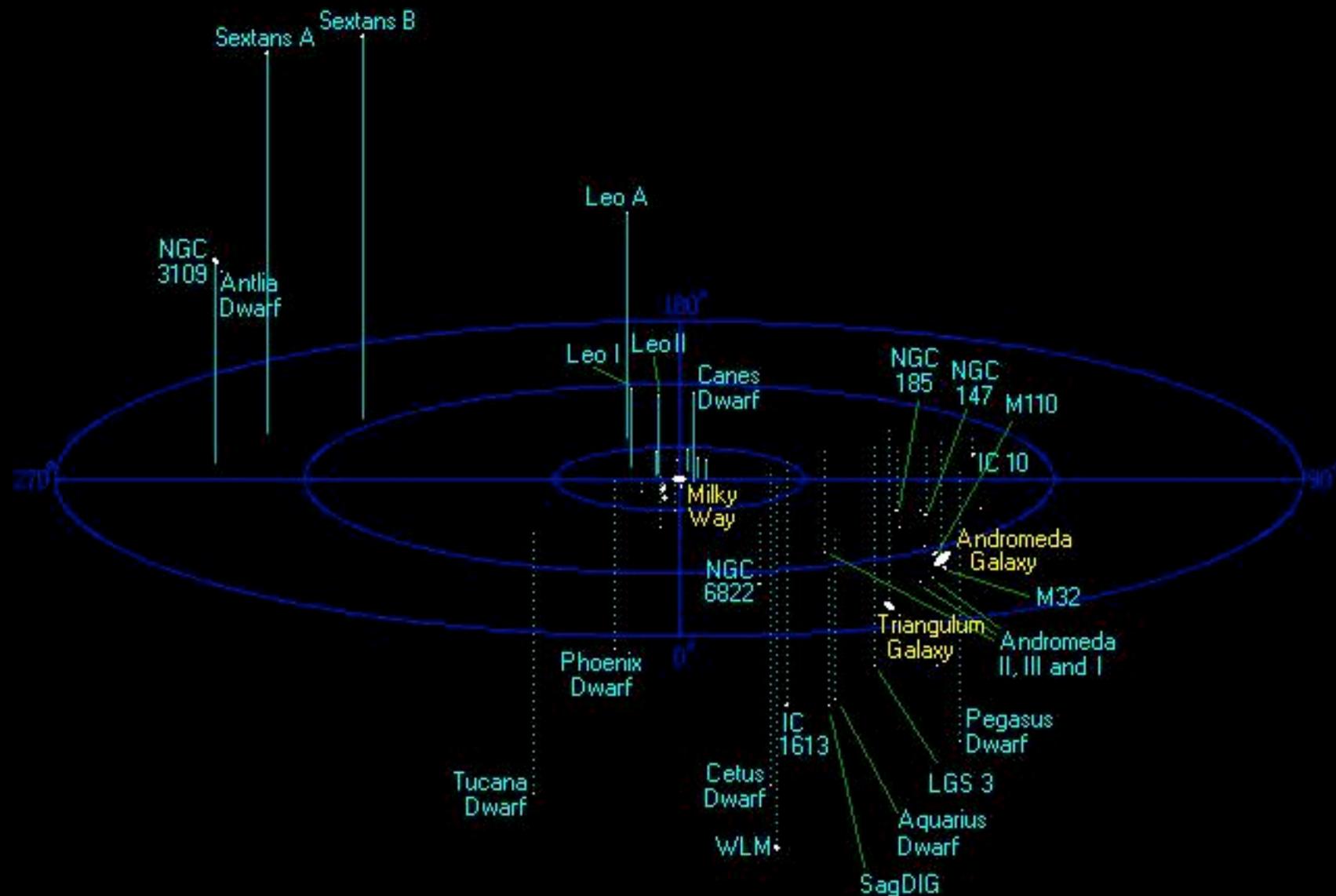




100.000 lyr

1.000.000 lyr

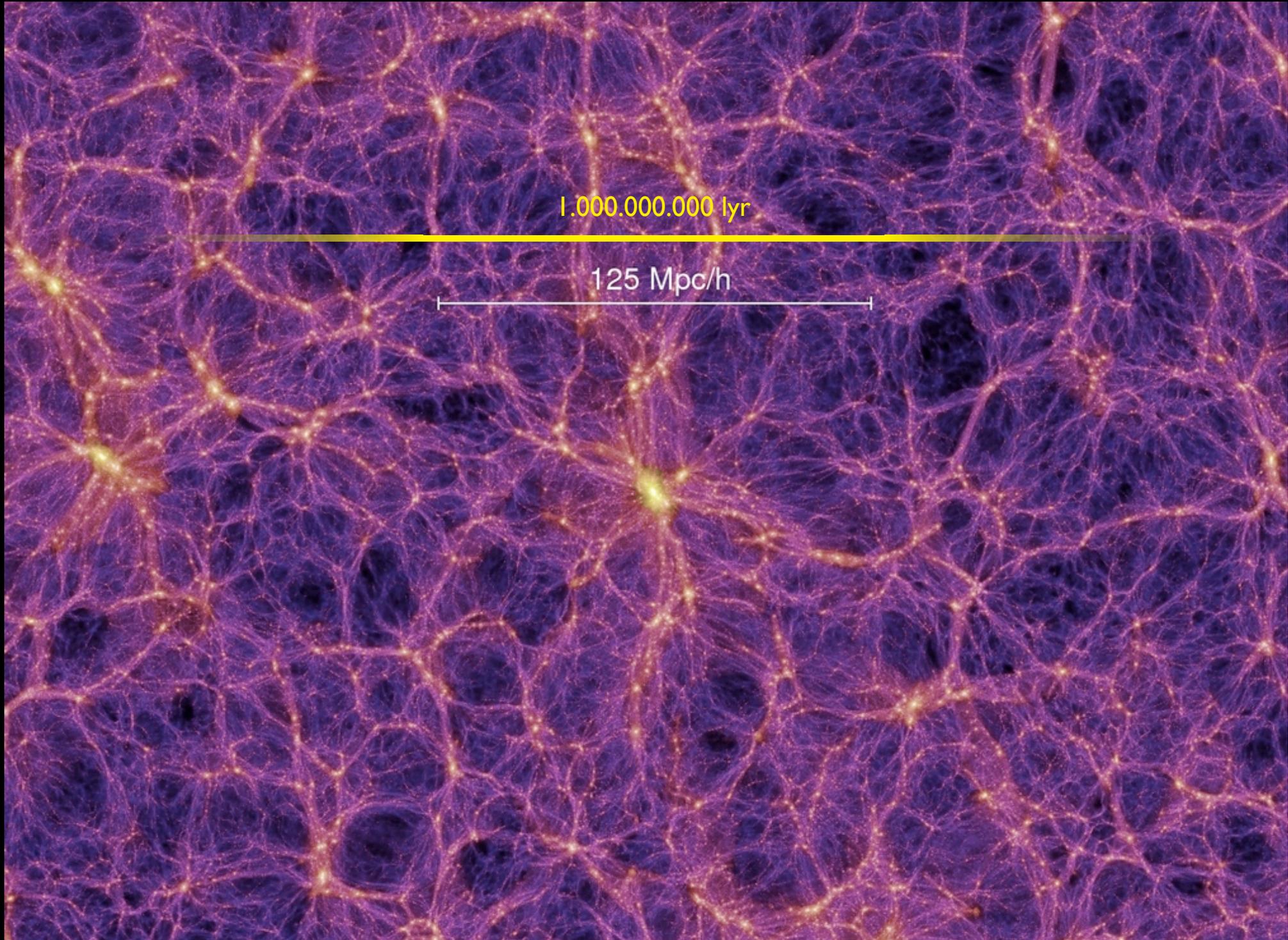




10.000.000 lyr



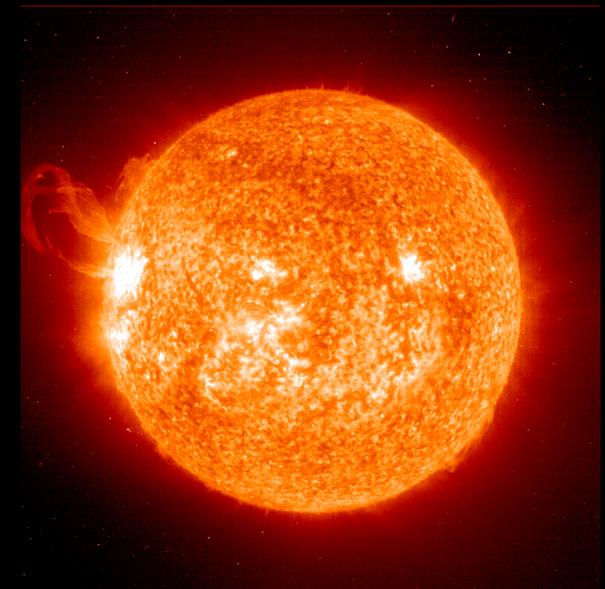
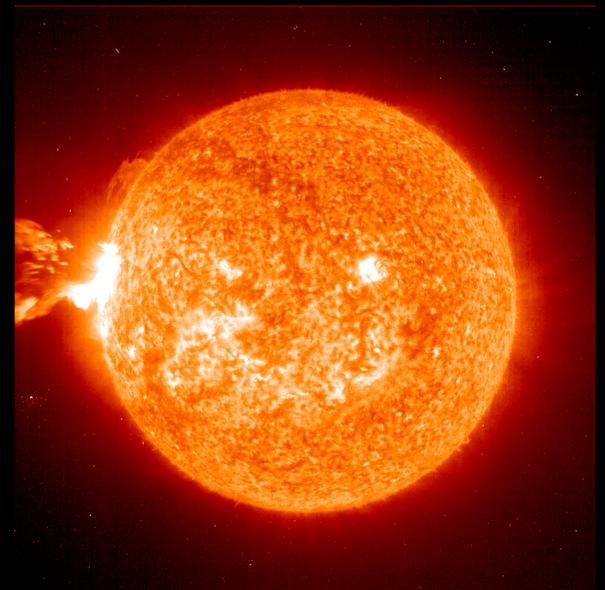
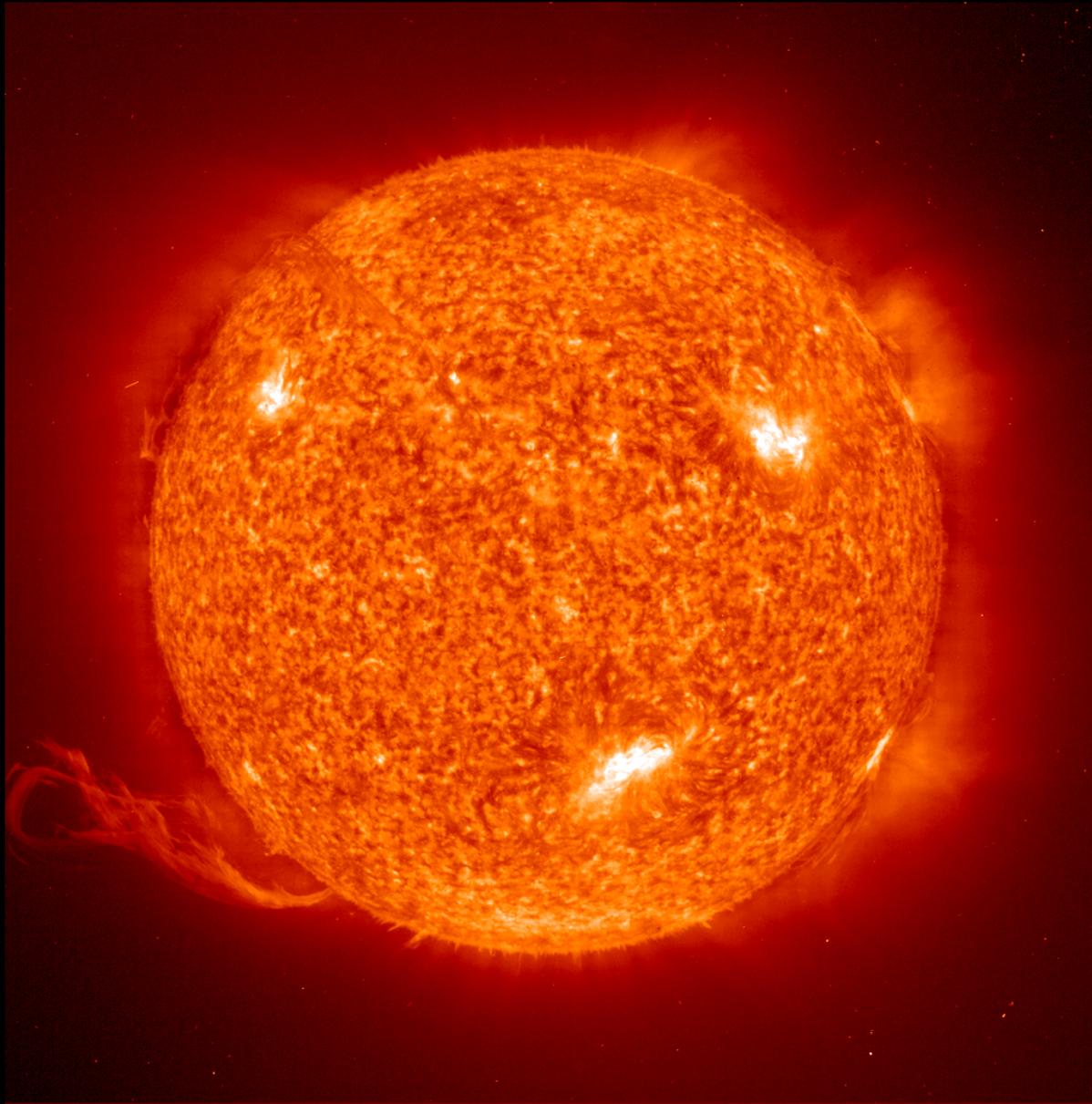
100.000.000 lyr

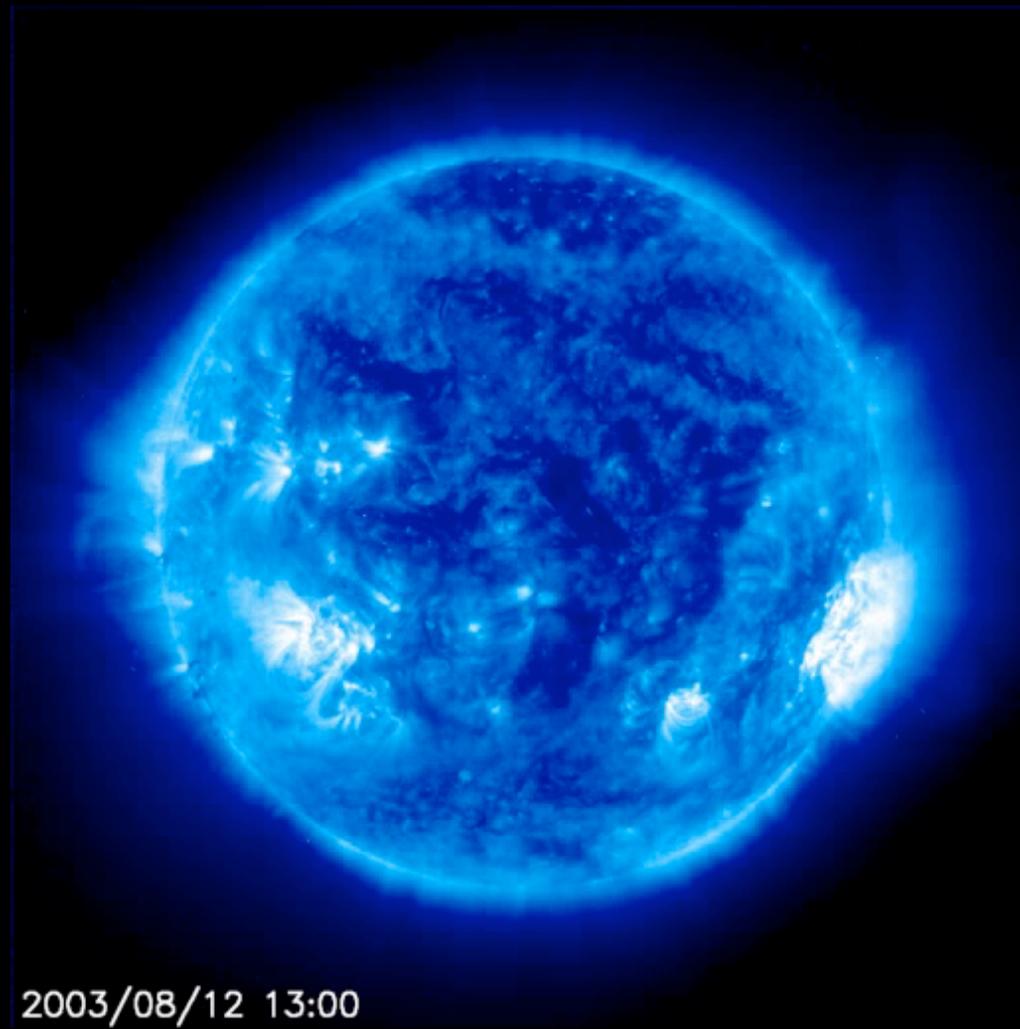


1.000.000.000 lyr

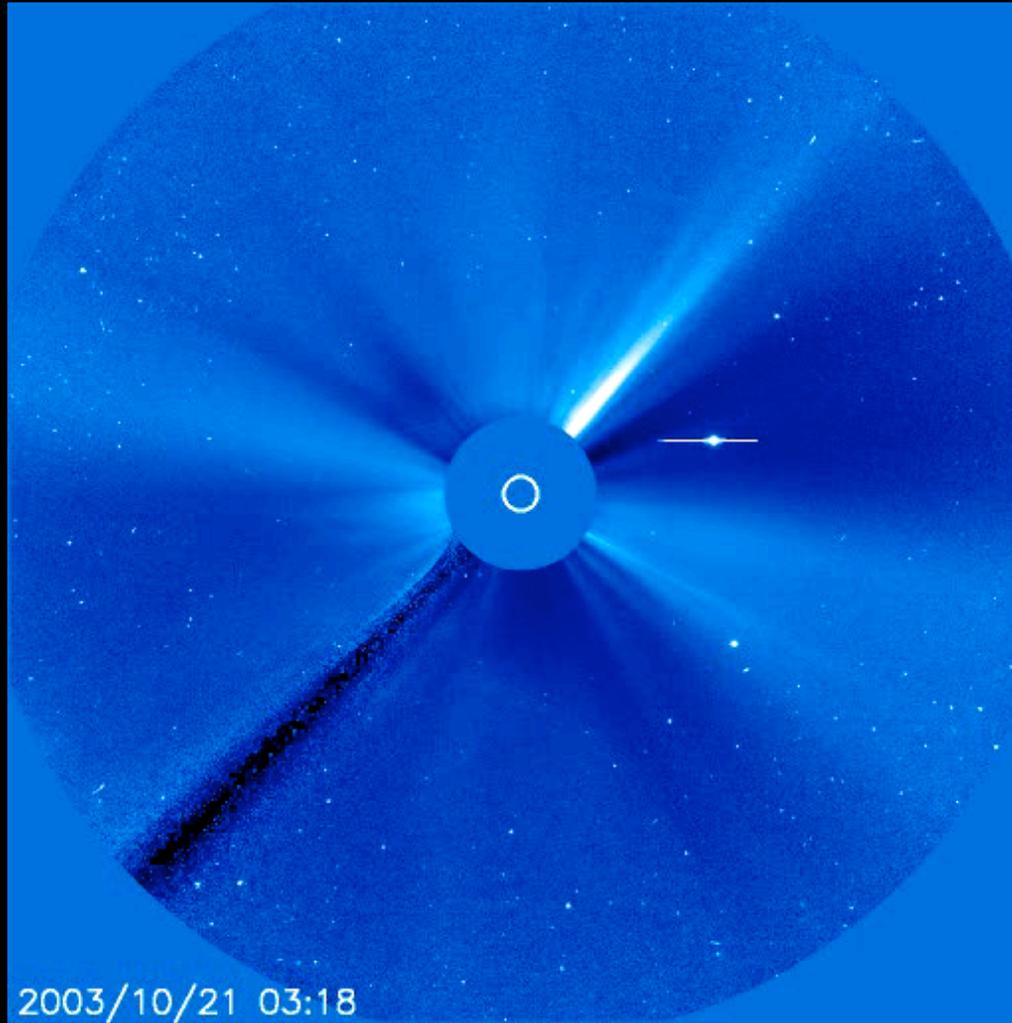
125 Mpc/h

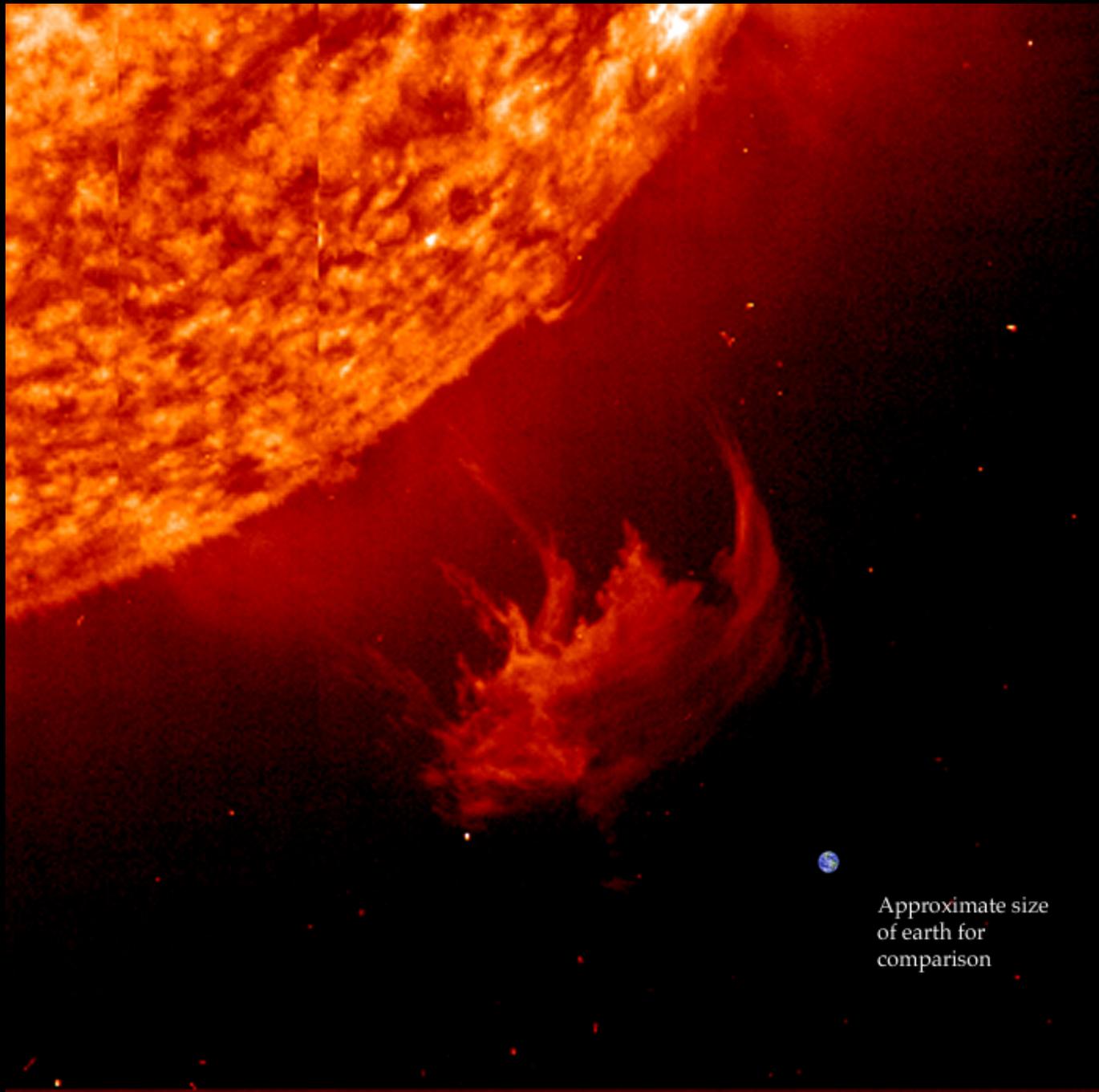
Sonne und Planeten





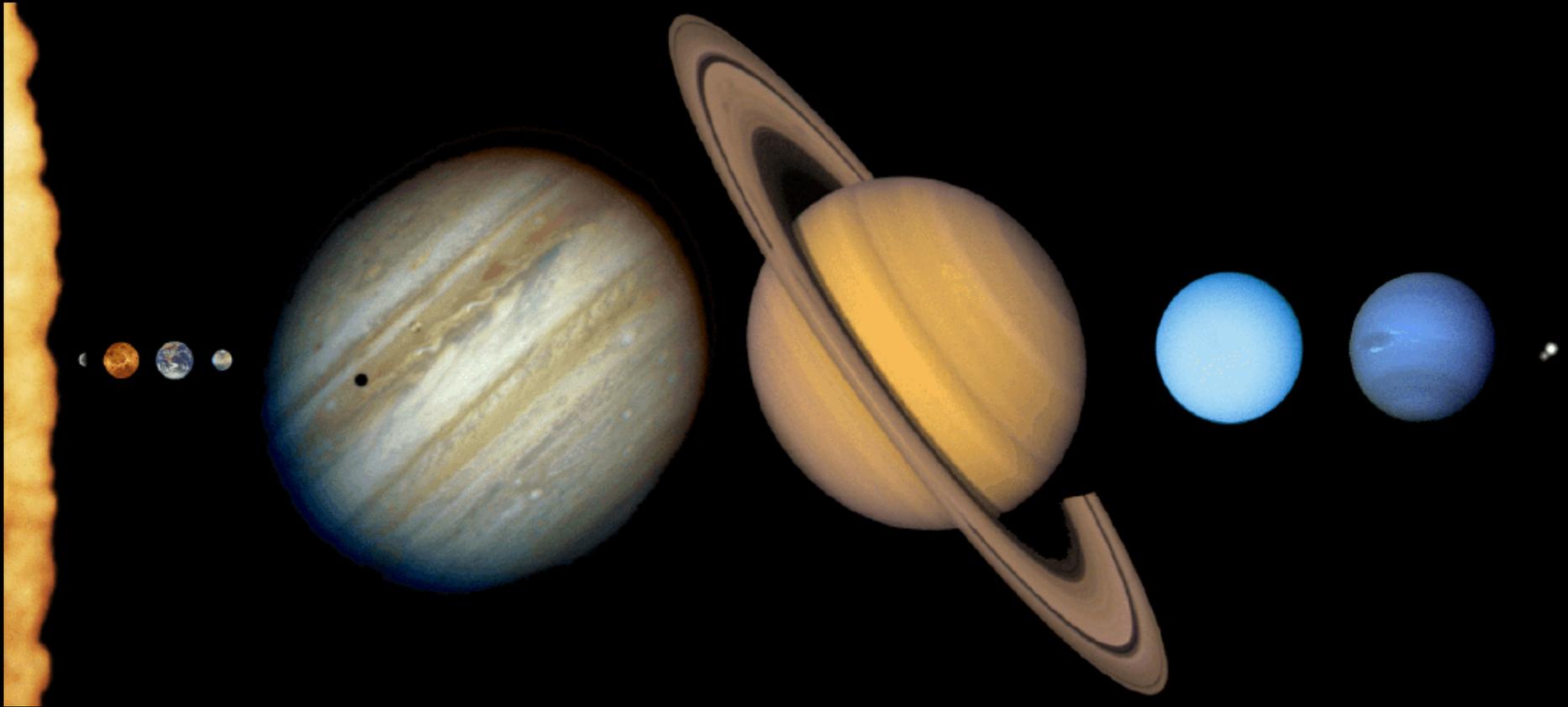
2003/08/12 13:00





Approximate size
of earth for
comparison

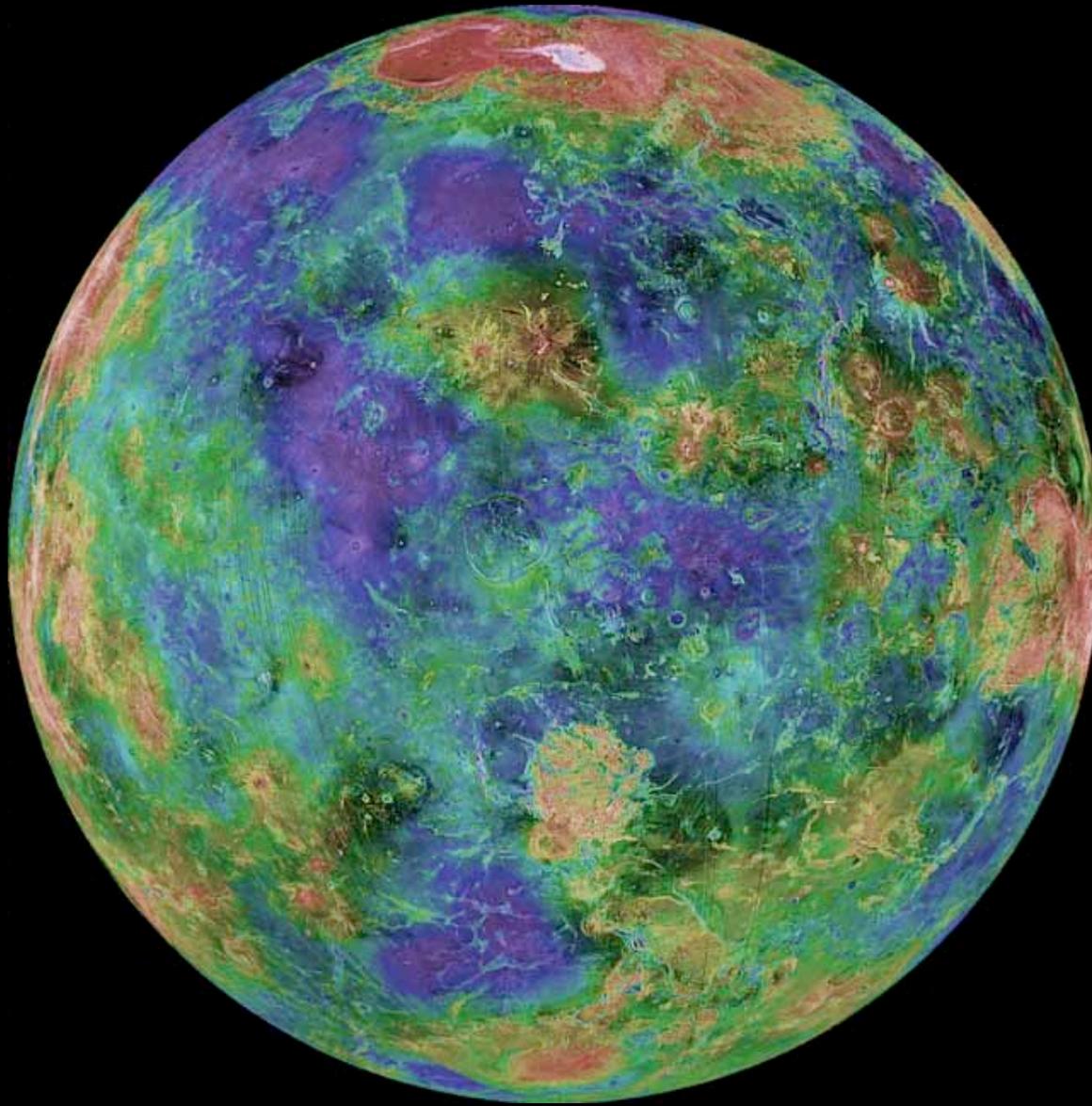
Größenvergleich





Merkur

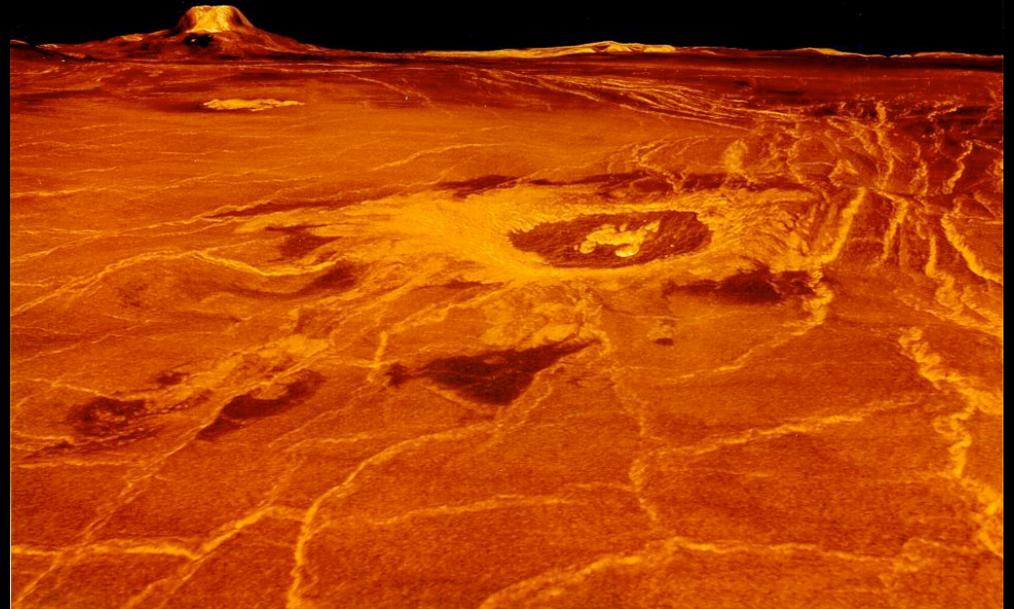
- Merkur ist der innerste Planet.
- Sein Durchmesser ist etwa $\frac{1}{3}$ des der Erde.



Venus

- Venus ist der zweite Planet.
- Sie ist etwa gleich groß wie die Erde.

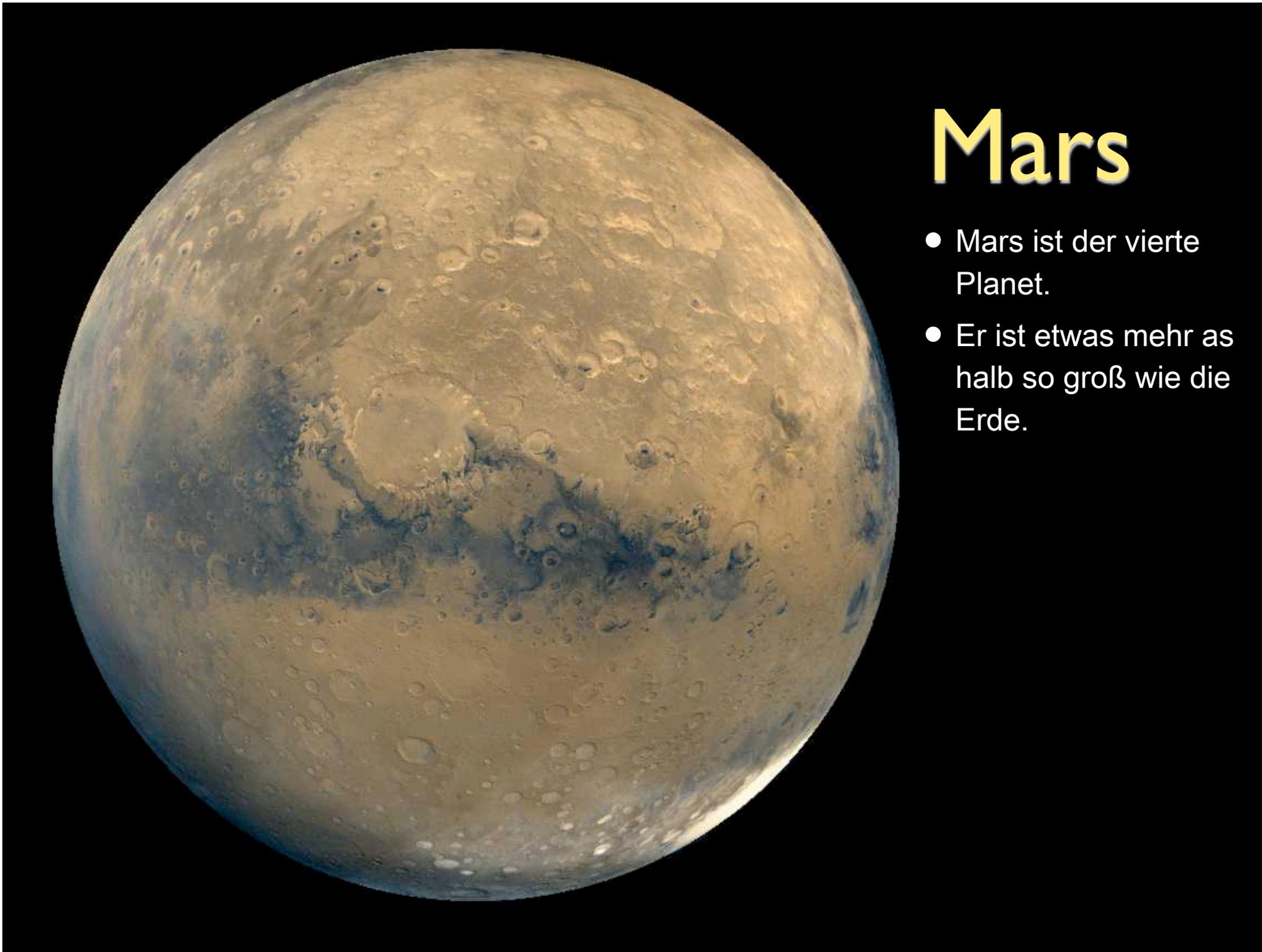
Venus





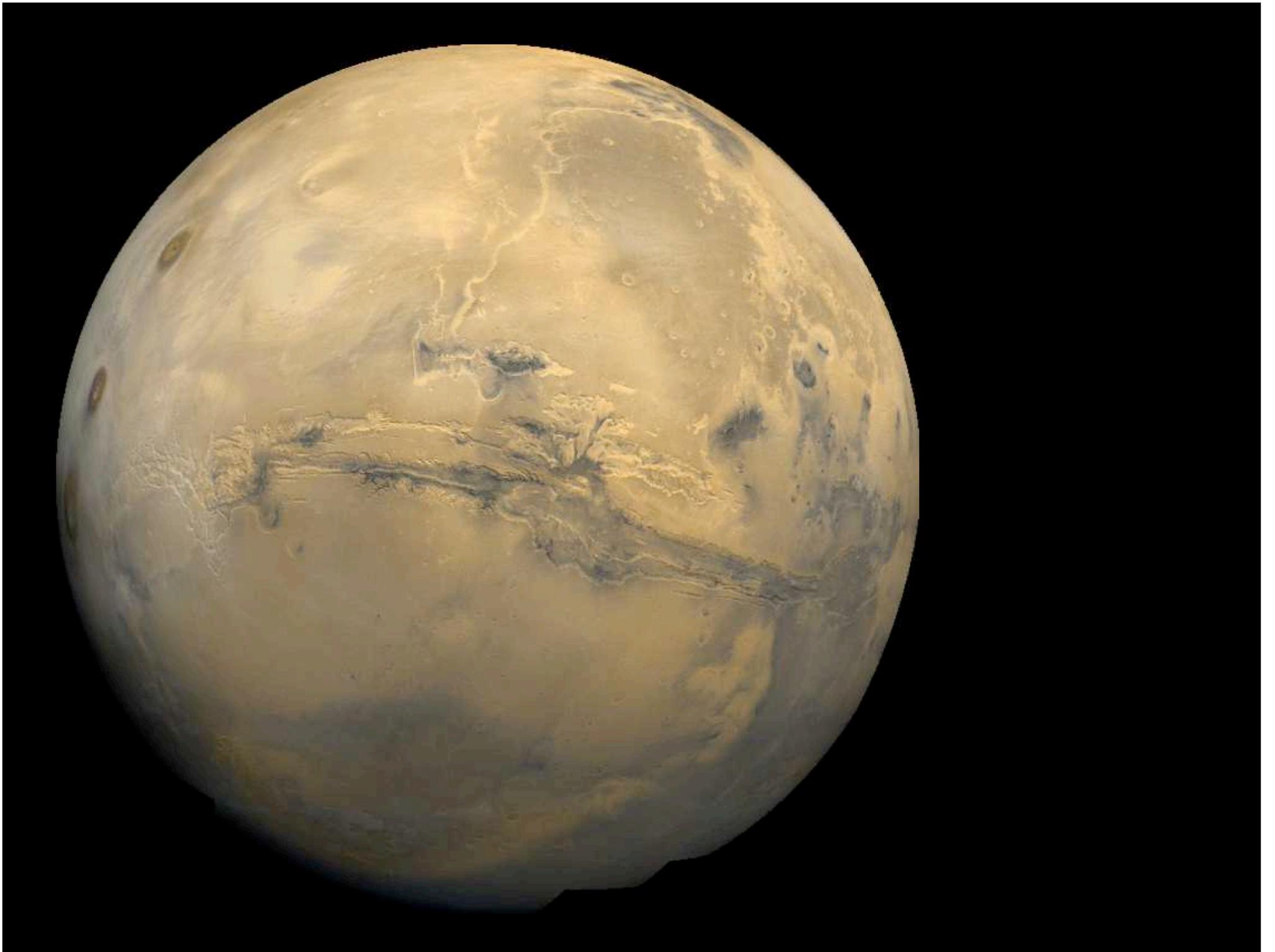
Erde

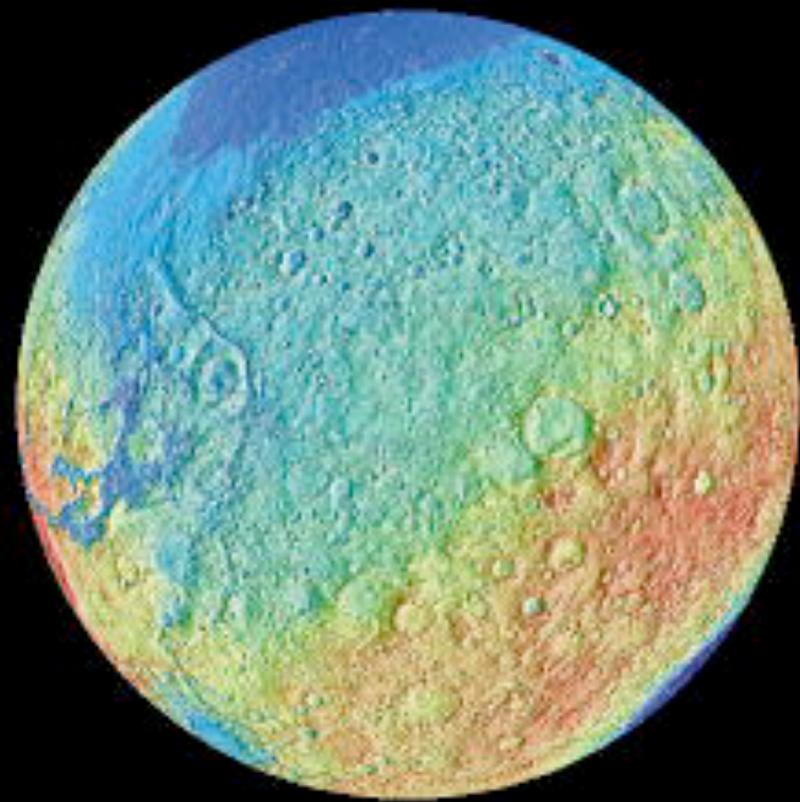
- Die Erde ist der dritte Planet.
- Sie hat einen Durchmesser von 12.000 km.

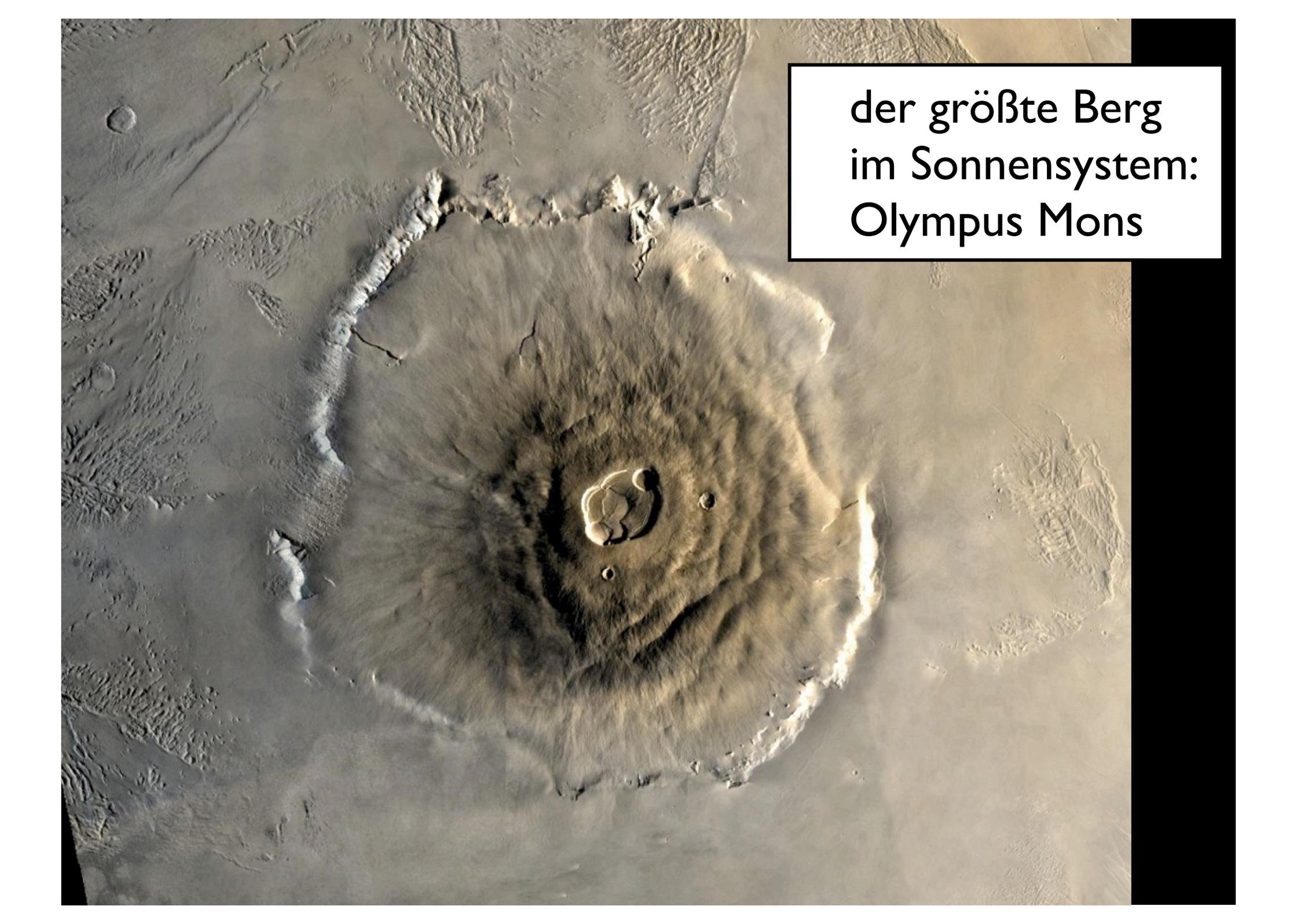


Mars

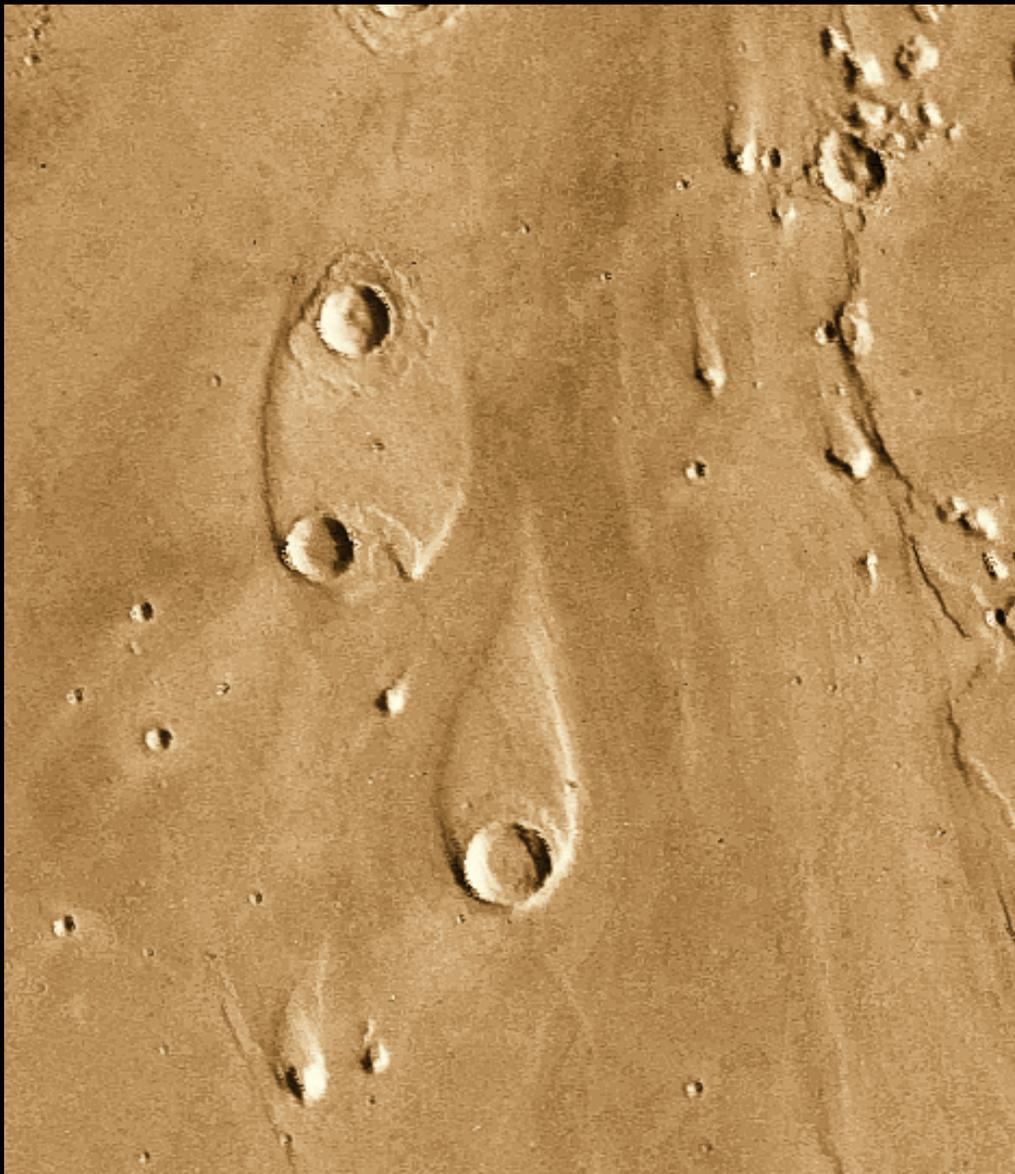
- Mars ist der vierte Planet.
- Er ist etwas mehr als halb so groß wie die Erde.





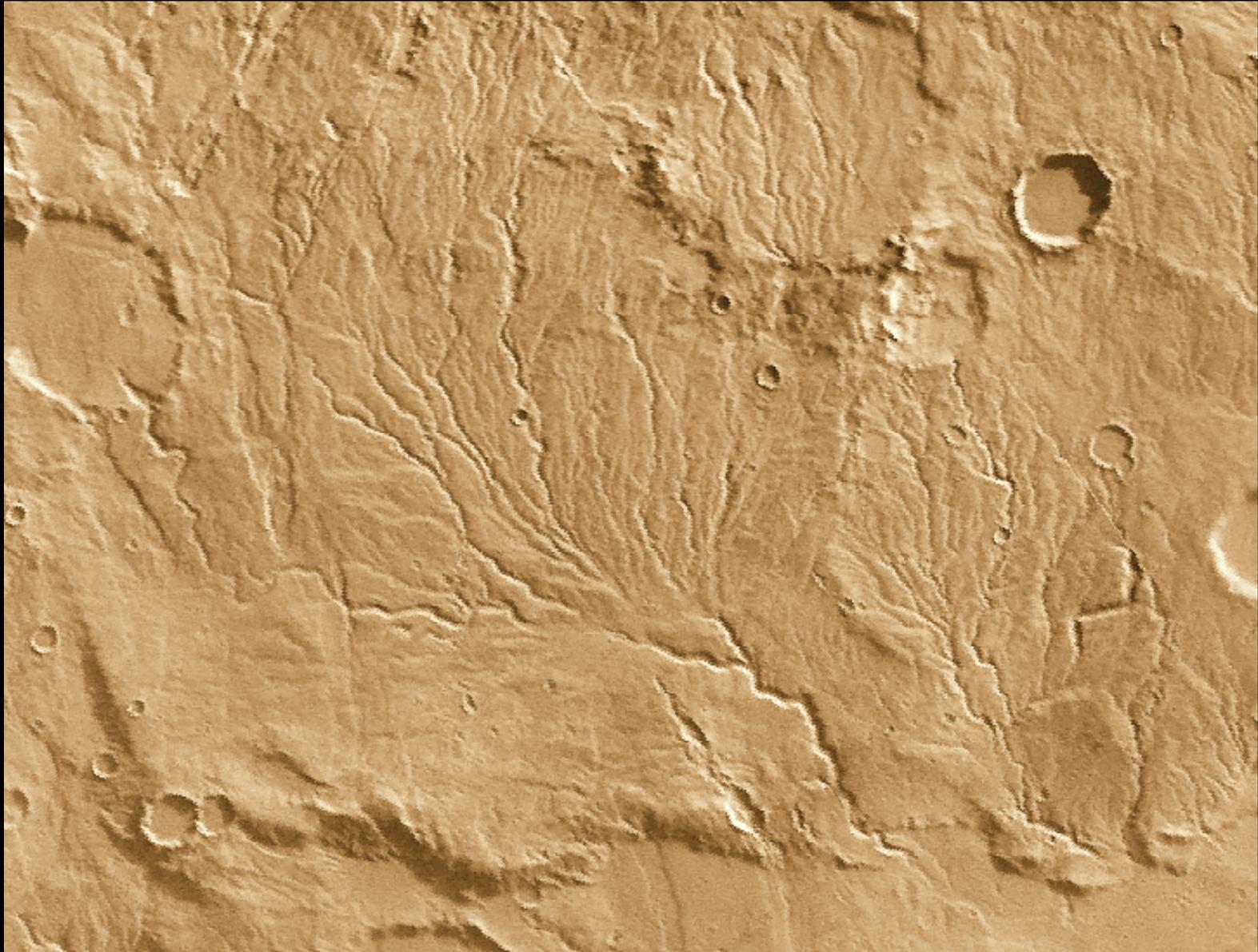
An aerial photograph of the Martian surface, showing the massive shield volcano Olympus Mons. The volcano is a large, roughly circular feature with a prominent rim and a central caldera. The surrounding terrain is relatively flat with some smaller craters and ridges. The lighting creates shadows that emphasize the topography of the volcano.

der größte Berg
im Sonnensystem:
Olympus Mons



inselartige Strukturen

Netzwerk von Tälern





Asteroiden



Gaspra

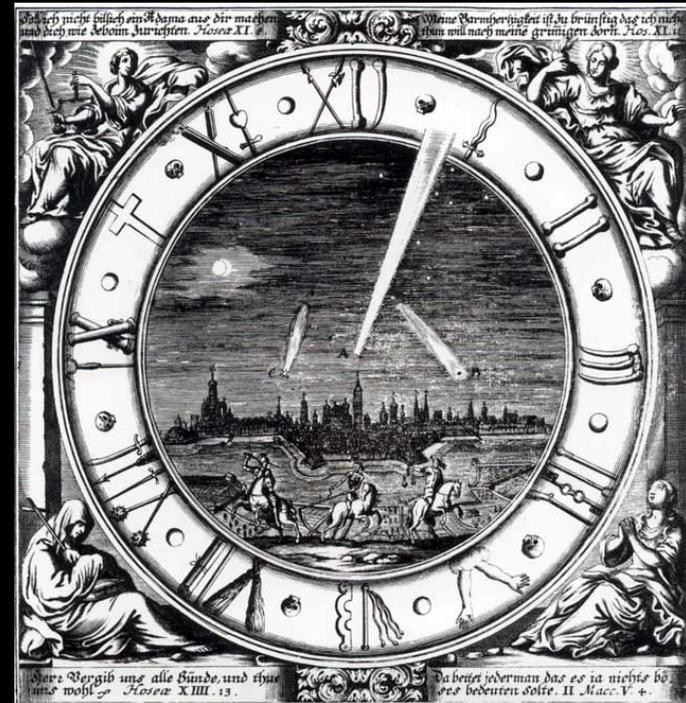


Ida



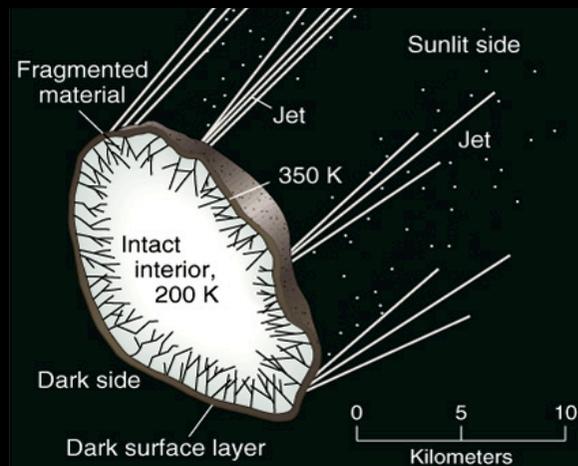
Mathilda

Kometen

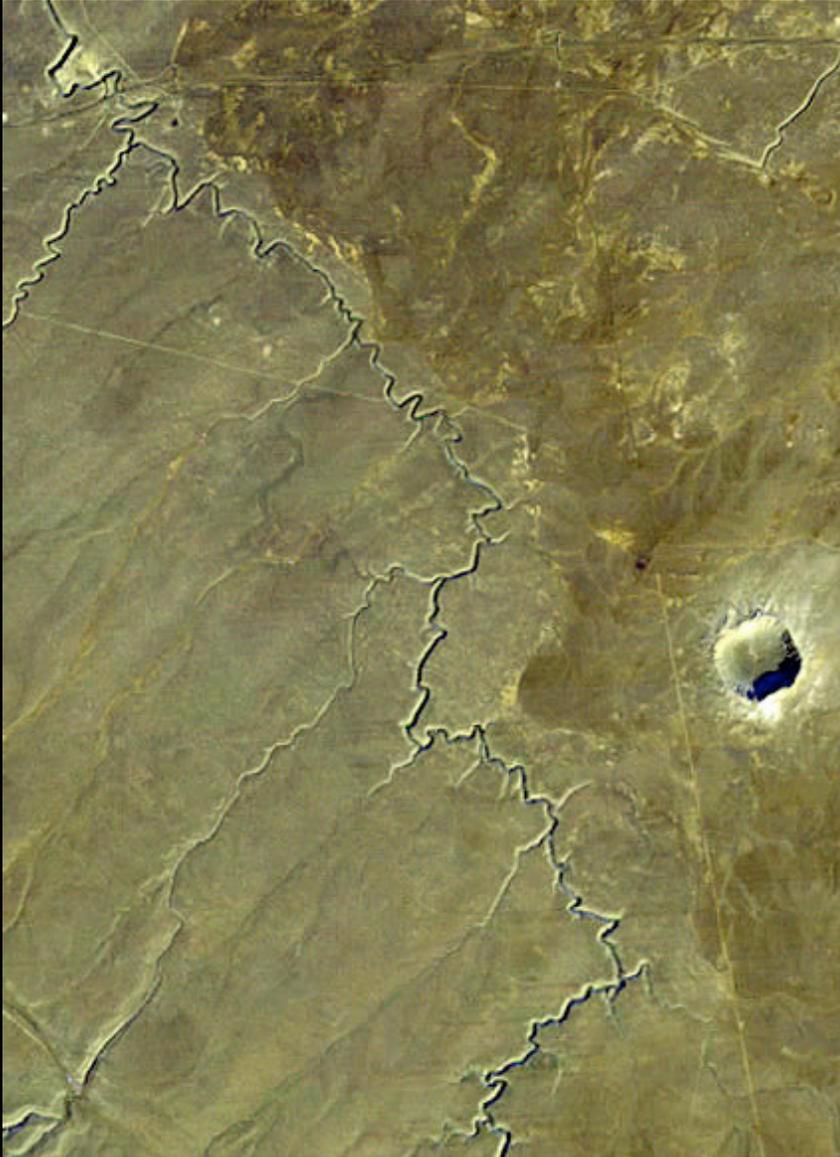




Kometenkerne



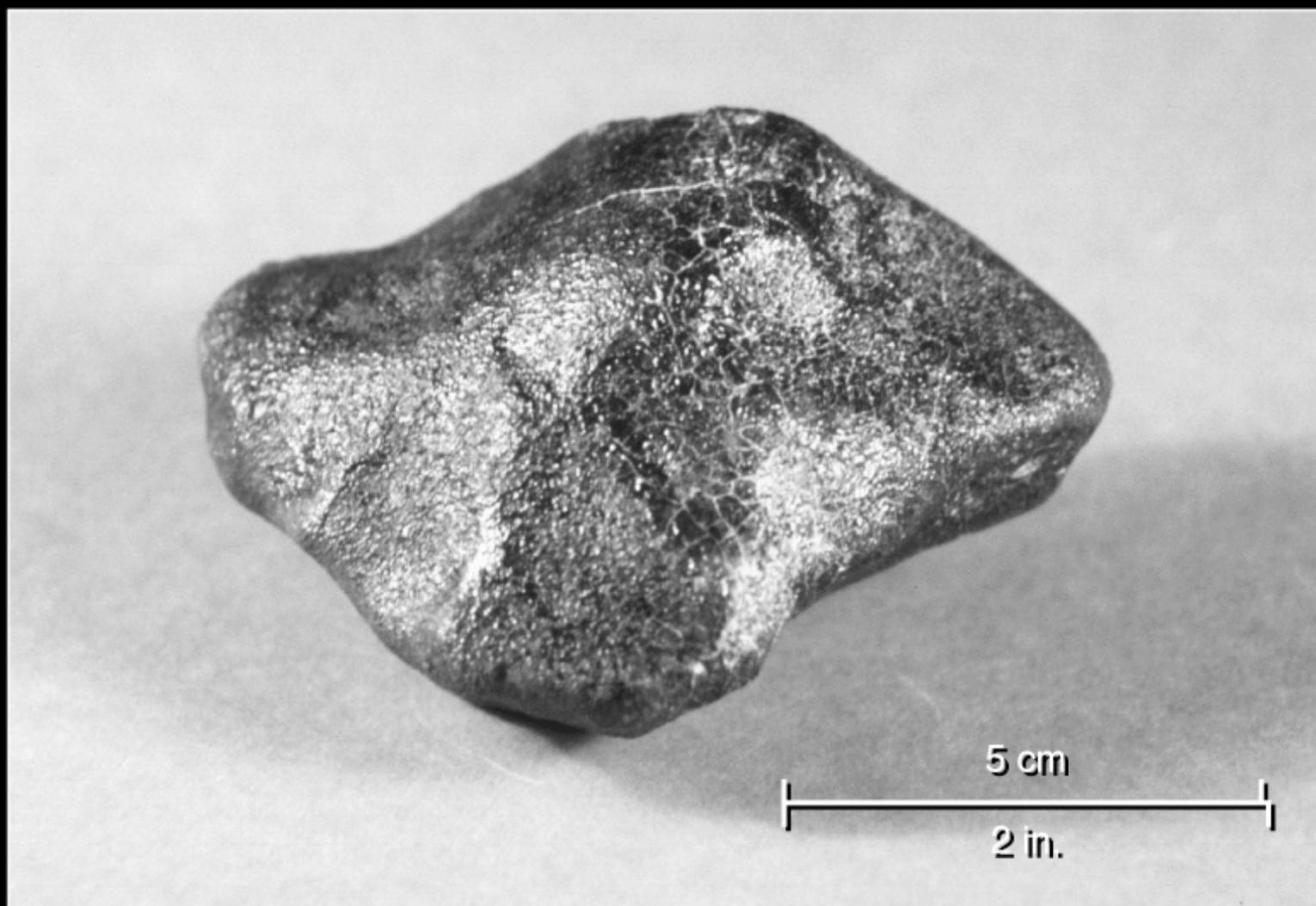
- Kometen sind “schmutzige Schneebälle”
- sobald sie in Sonnennähe kommen fangen sie an zu “schmelzen” / verdampfen
- dieser Dampf bildet den Kometenschweif



**Barringer Crater in
Arizona in den USA**



Der Manicouagan
See in Eastern
Ontario in
Kanada.



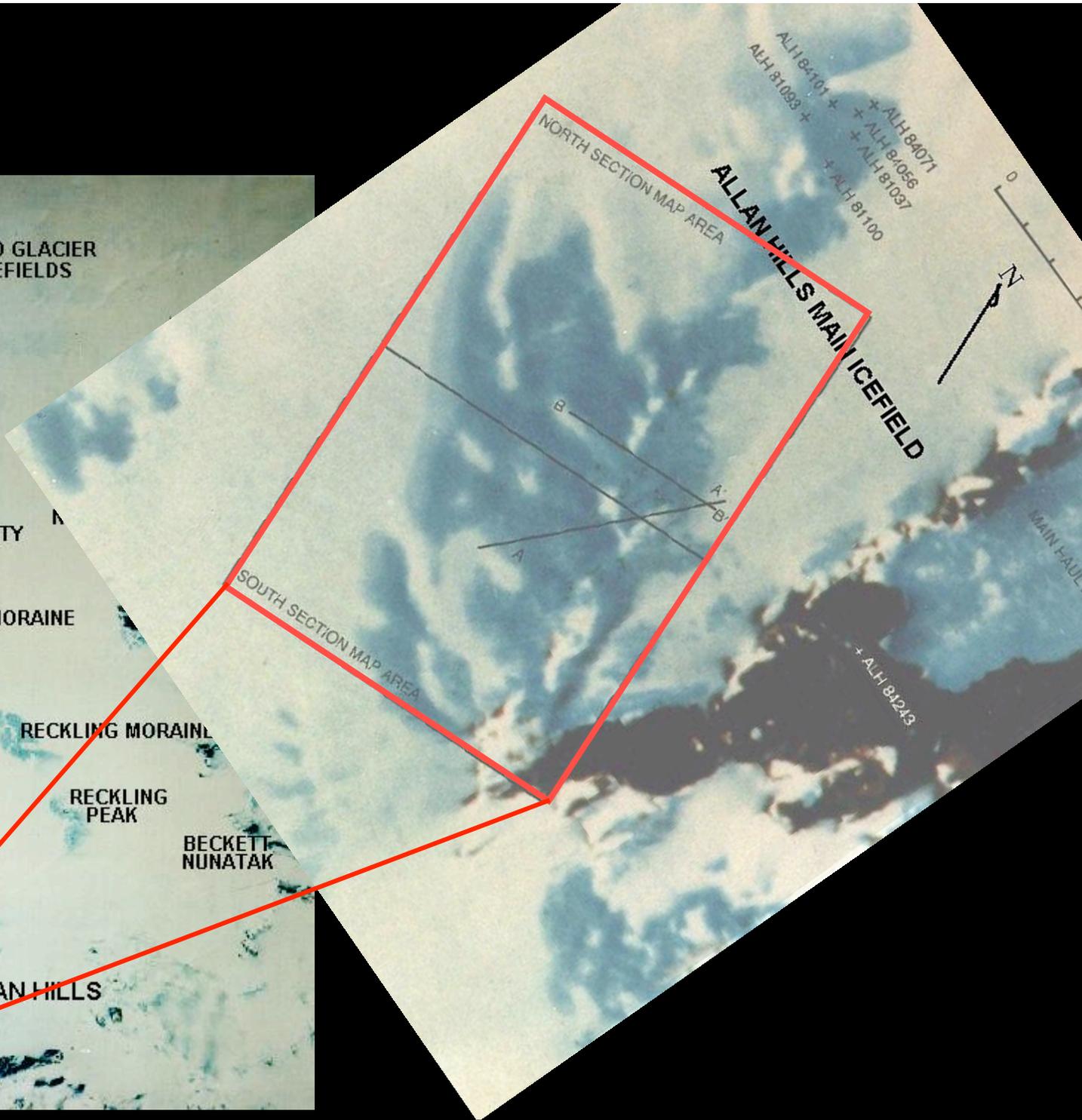
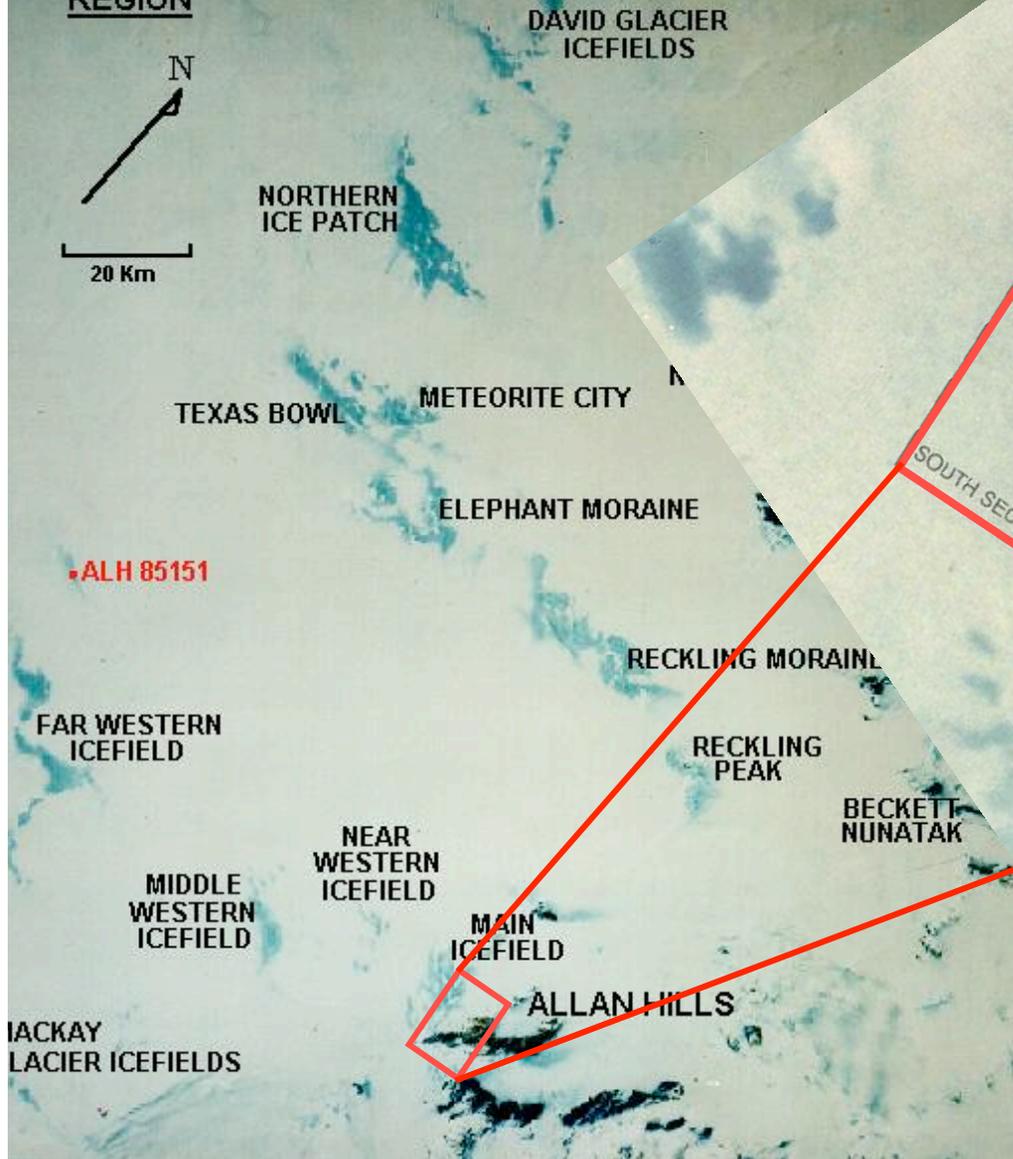
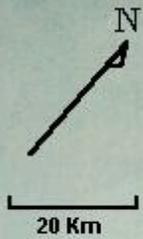
Meteroite · Fragment of Vesta

Lab Photograph · Russel Kempton, New England Meteoritical Services

PRC95-20B · ST Scl OPO · April 19, 1995 · B. Zellner (GA Southern Univ.), NASA

ALLAN HILLS-DAVID GLACIER

REGION







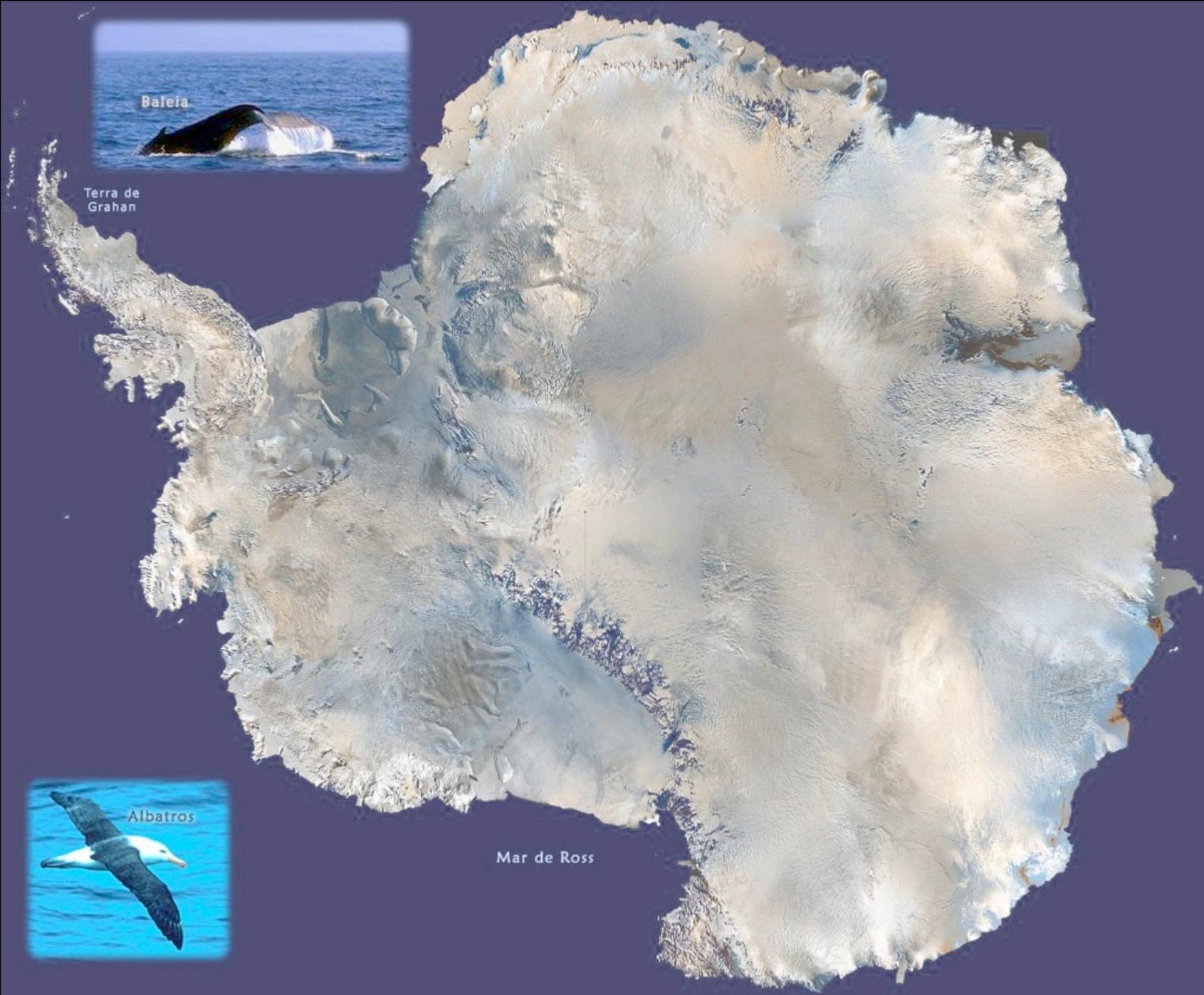
Baleia

Terra de
Graham



Albatros

Mar de Ross

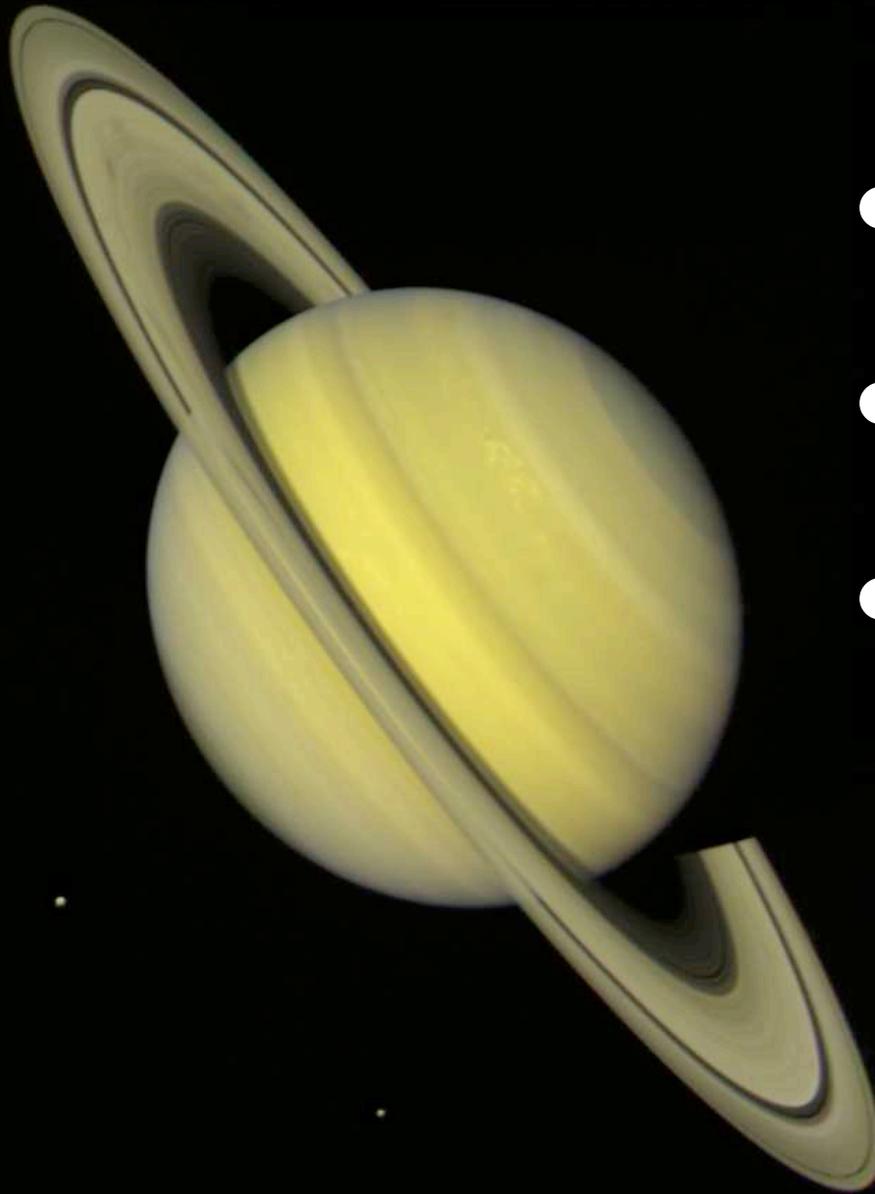


Jupiter

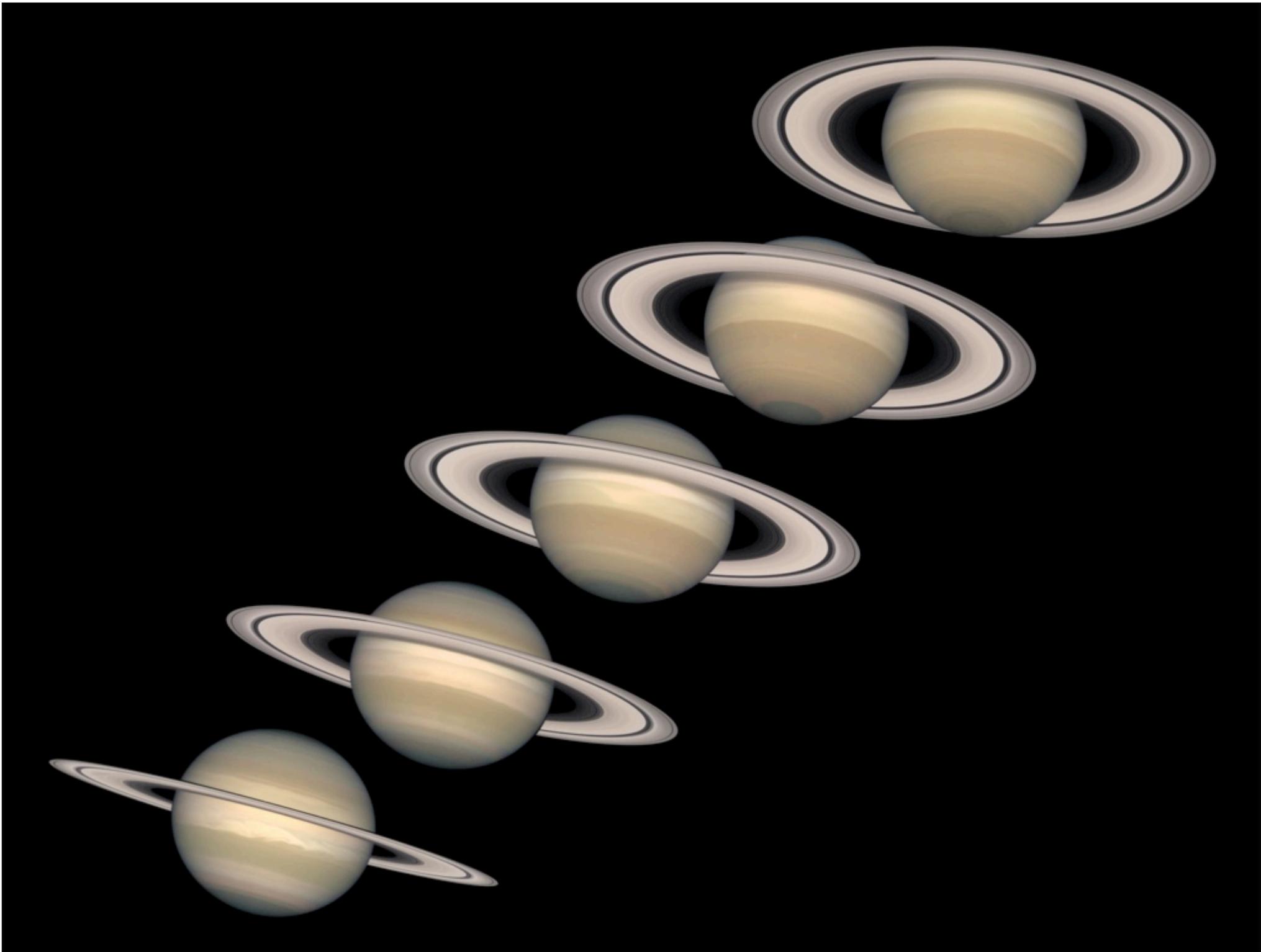


- Größter Planet des Sonnensystems
- Ist etwa 10x größer als die Erde.
- Ist etwa 10x kleiner als die Sonne.

Saturn



- Zweitgrößter Planet des Sonnensystems
- Ist etwas kleiner als Jupiter.
- Hat ausgeprägteste Ringstruktur

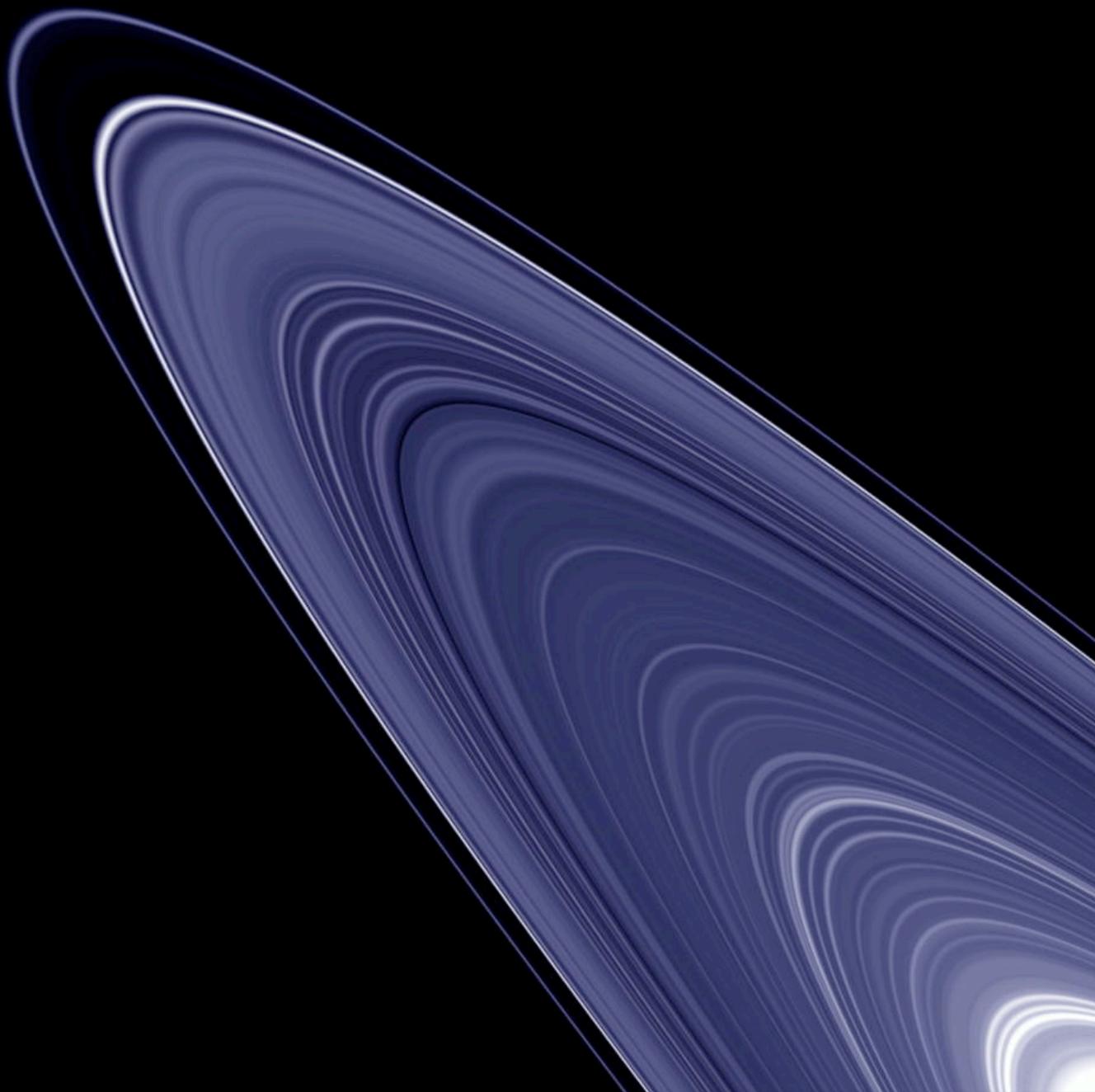




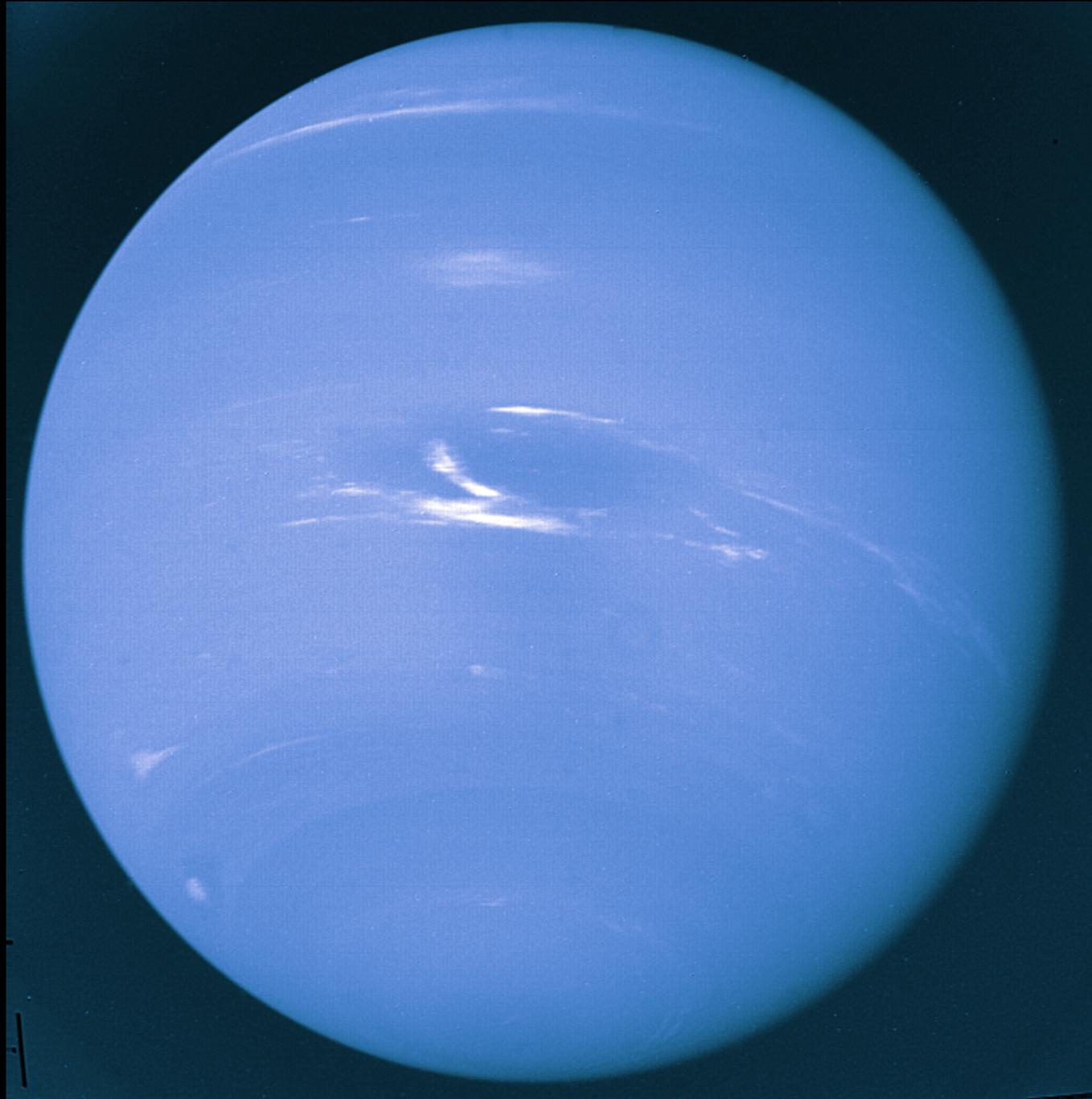
Uranus

Uranus

© Copyright Calvin J. Hamilton



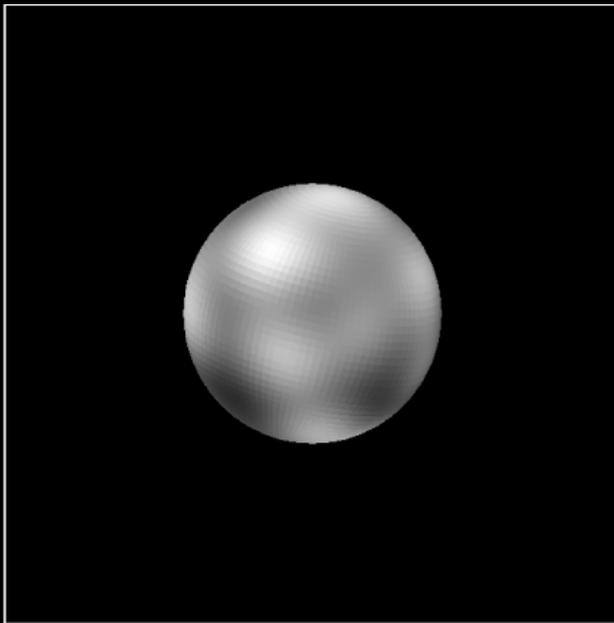
Alle
Gasplaneten
haben Ringe.
Das gilt auch
für Uranus.



Neptun

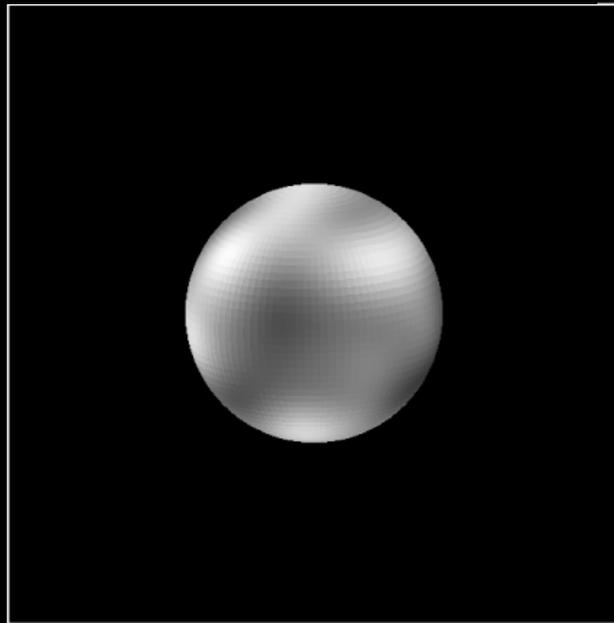
Pluto

Seit einigen Jahren ist Pluto kein Planet mehr, sondern ein Zwergplanet. Es gibt viele andere Zwergplaneten.

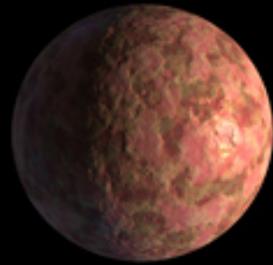


Pluto

PRC96-09a · ST ScI OPO · March 7, 1996 · A. Stern (SwRI), M. Buie (Lowell), NASA, ESA



HST · FOC



Sedna
800-1100 miles
in diameter



Quaoar
(800 miles)



Pluto
(1400 miles)



Moon
(2100 miles)



Earth
(8000 miles)

E N D E