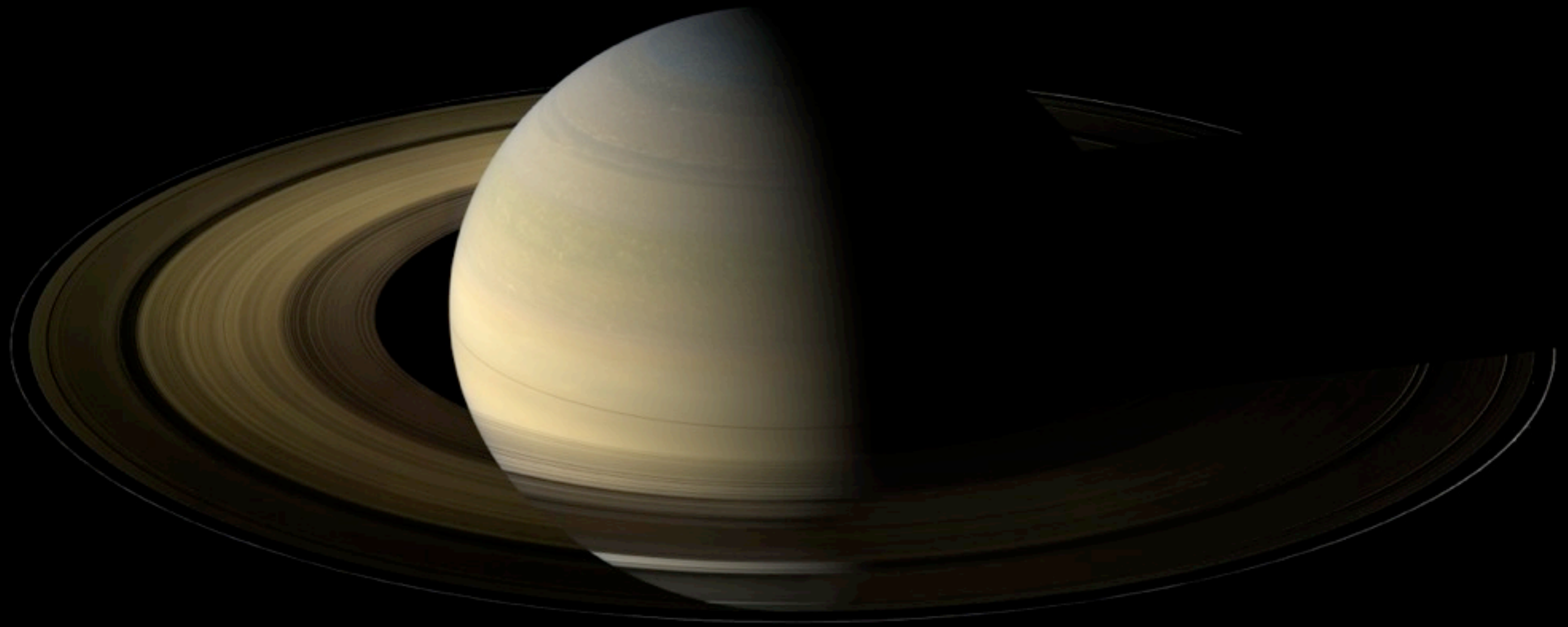


# Satúrnus



# Satúrnus

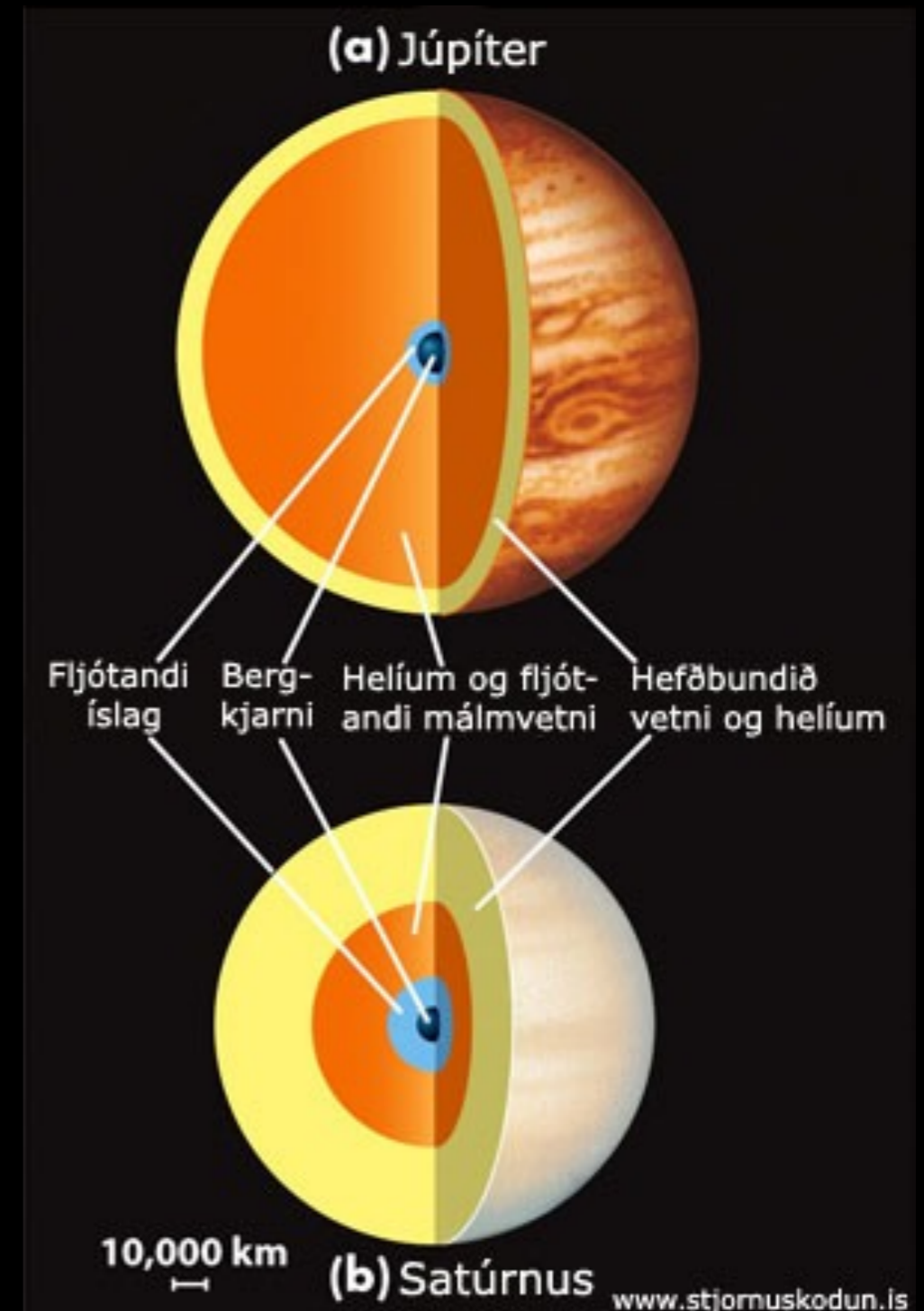
- Sjötta reikistjarna sólkerfisins
- 9,5 AU frá sólu
- Vegur 95,16 jarðmassa
- Þvermálið er um 115.000 km (9 jarðþvermál)
- Ekkert eiginlegt yfirborð
- Hefur 62 þekkt fylgitungl
- Eitt ár á Satúrnusi = 29,7 jarðár
- Mjög lágur eðlismassi, flyti á vatni!

# Satúrnus og jörðin



# Innri gerð I

- Kjarni úr bergi
- Fljótandi vatn, metan, ammoníak
- Málmkennt vetni og helíum
- Vetni og helíum í formi gass



# Innri gerð II

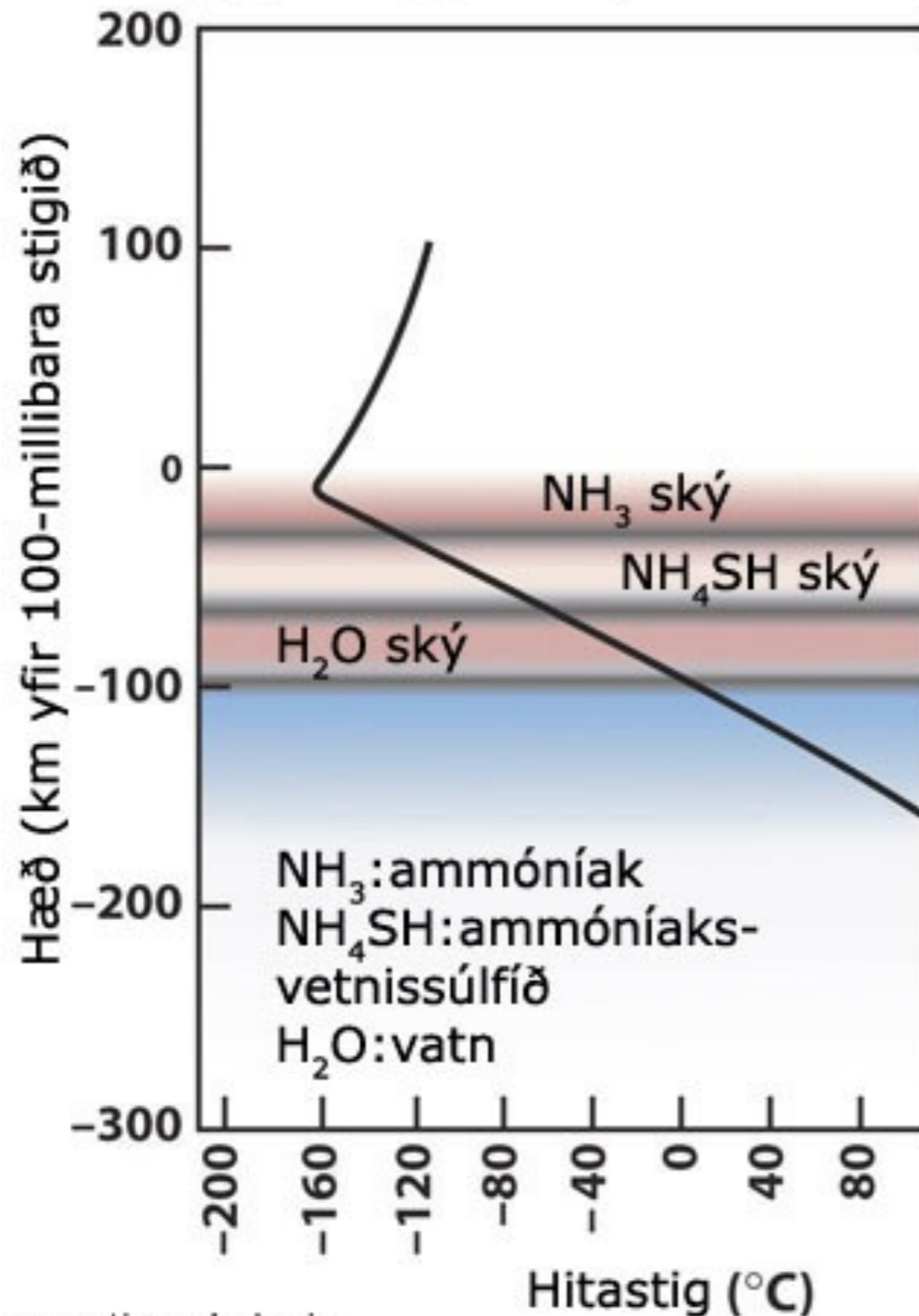
- Efnasamsetning
  - 88% vetni
  - 11% helíum
- Talsverð varmageislun er frá Satúrnusi
  - Geislar um þrefalt meiri orku frá sér en hann fær frá sólu
  - Hærra hlutfall en Júpíter, hvers vegna?

# Innri gerð II

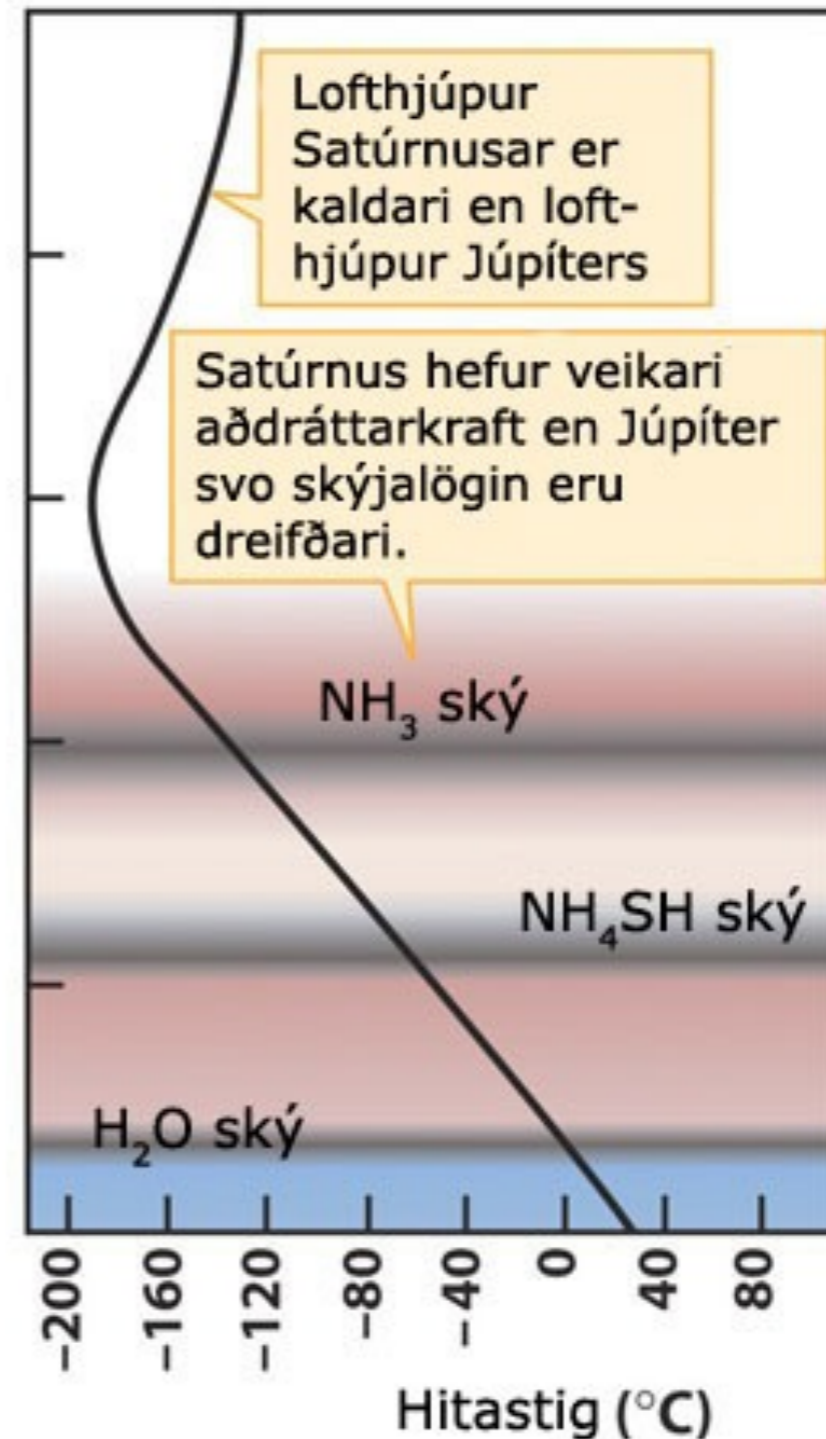
- Efnasamsetning
  - 88% vetni
  - 11% helíum
- Talsverð varmageislun er frá Satúrnusi
  - Geislar um þrefalt meiri orku frá sér en hann fær frá sólu
  - Hærra hlutfall en Júpíter, hvers vegna?
- Svartið er **helíumregn** í iðrum Satúrnusar
  - Helíum þéttist og fellur inn í kjarnann
  - Þyngdarstöðuorka þess breytist í varmaorku

# Lofthjúpur Satúrnusar

(a) Lofthjúpur Júpíters



(b) Lofthjúpur Satúrnusar

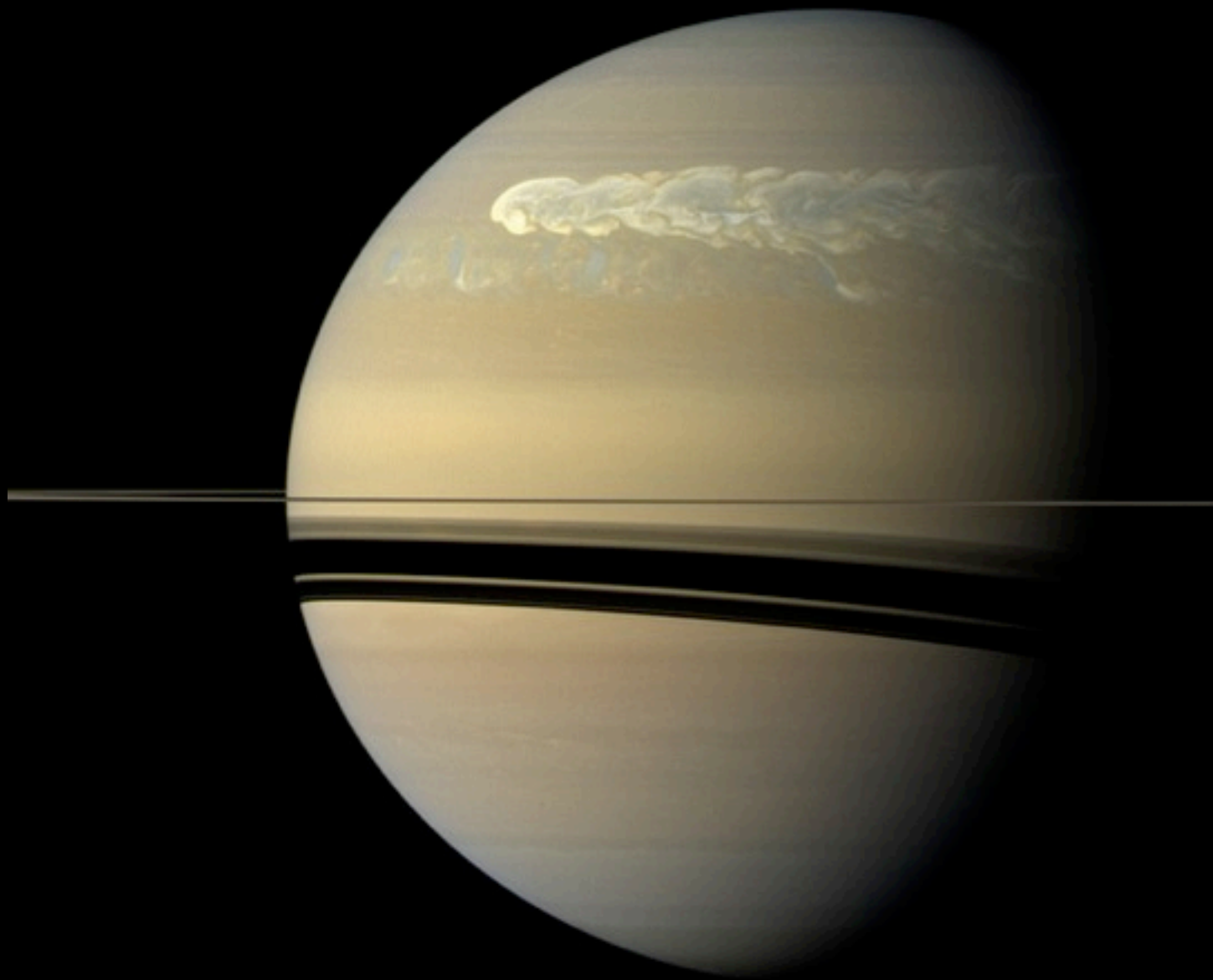


Vindafar

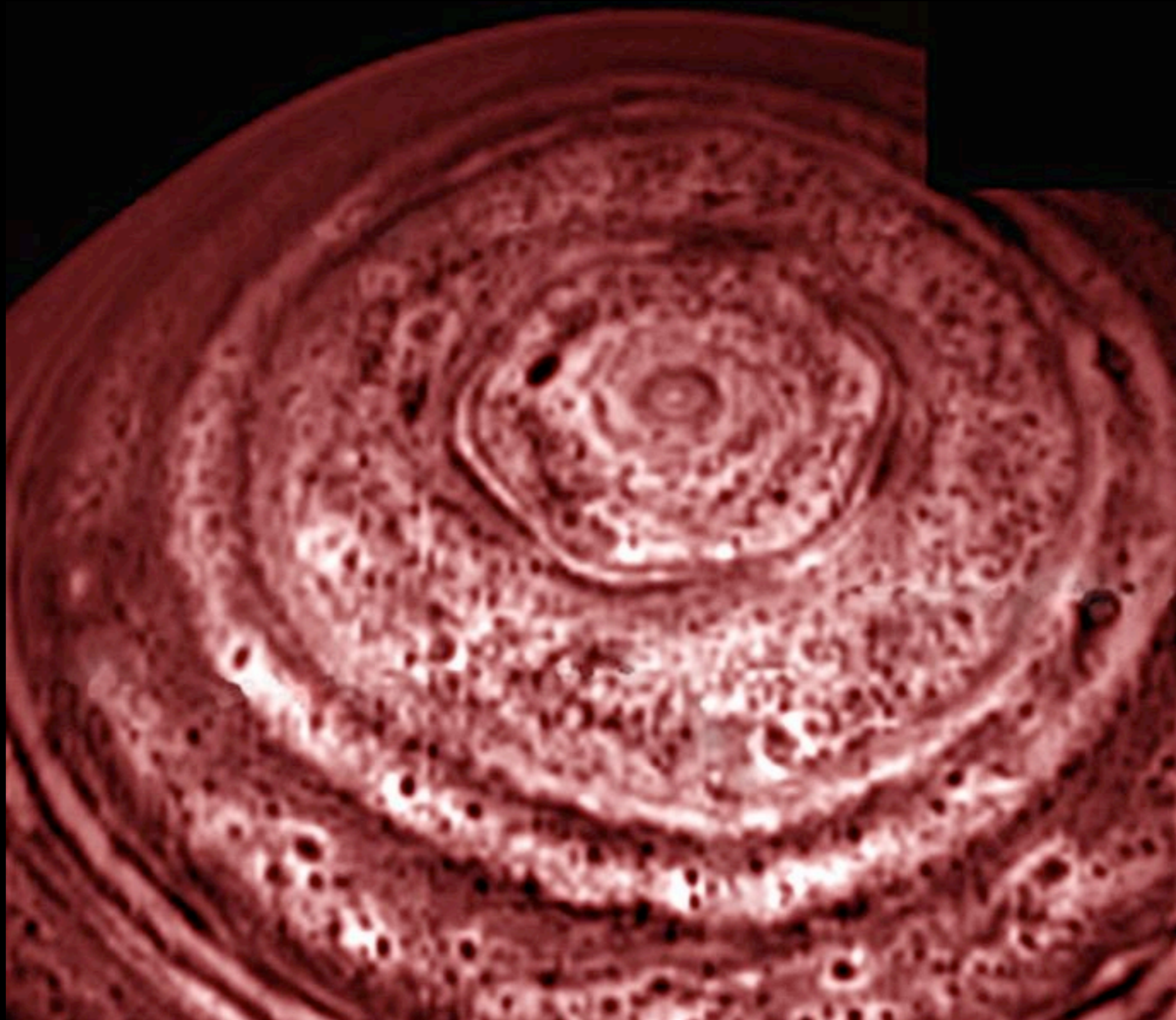
**Stormur**



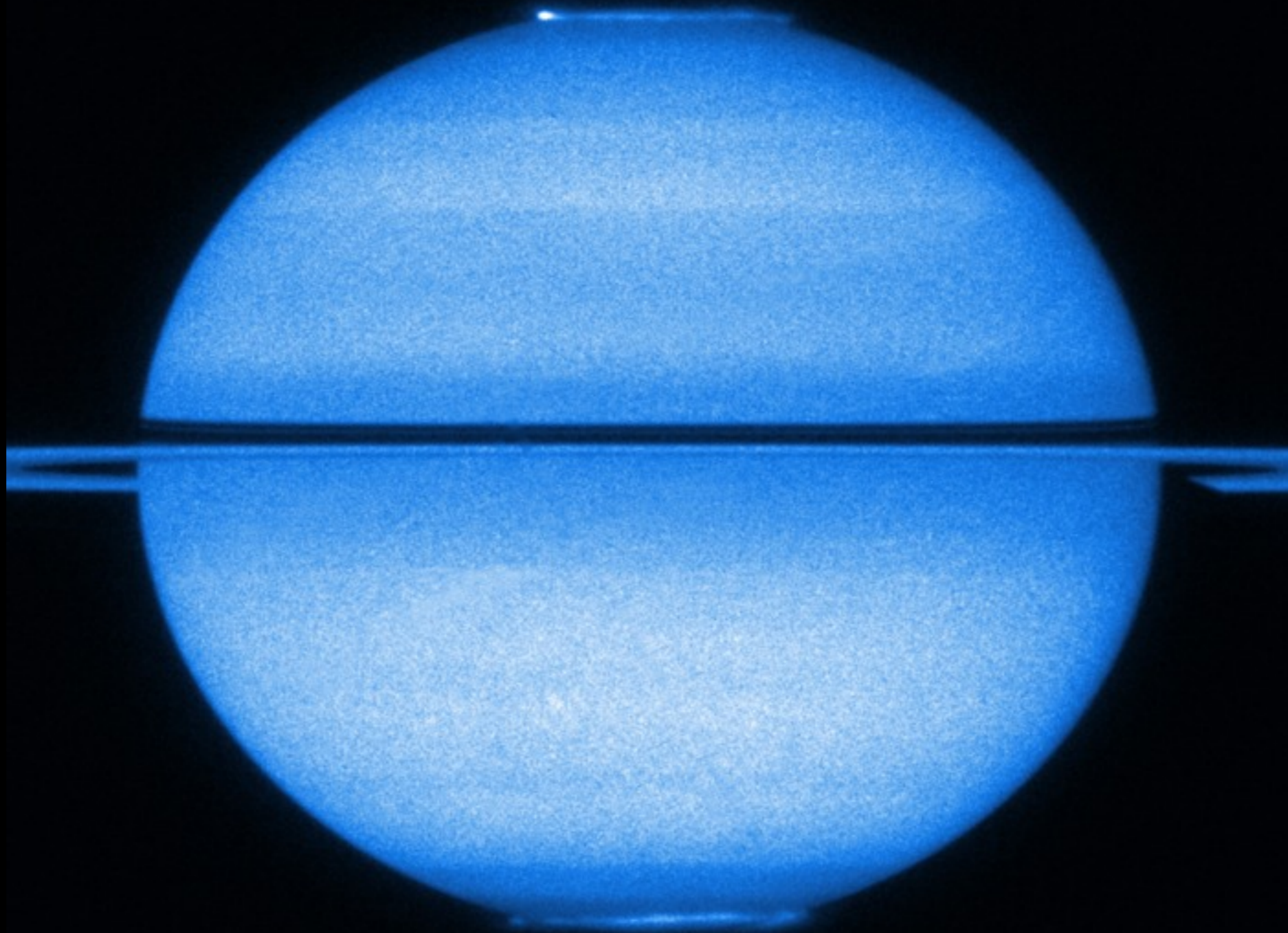




# Sexhýrnd ský á norðurhveli

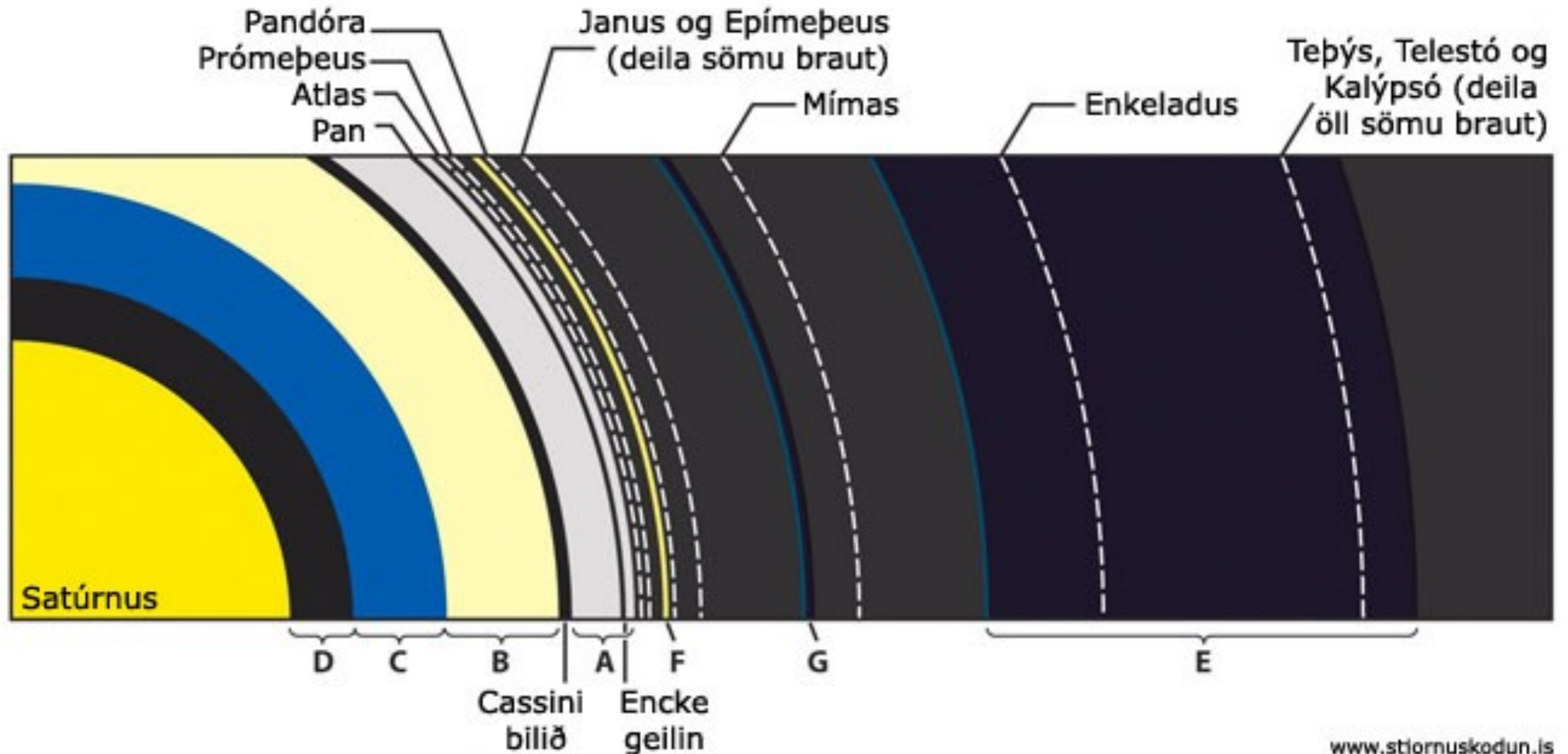


# Hvað sýnir myndin?



# Hringar Satúrnusar

- Eru aðallega gerðir úr ís
- Sem veldur því hve vel þeir sjást



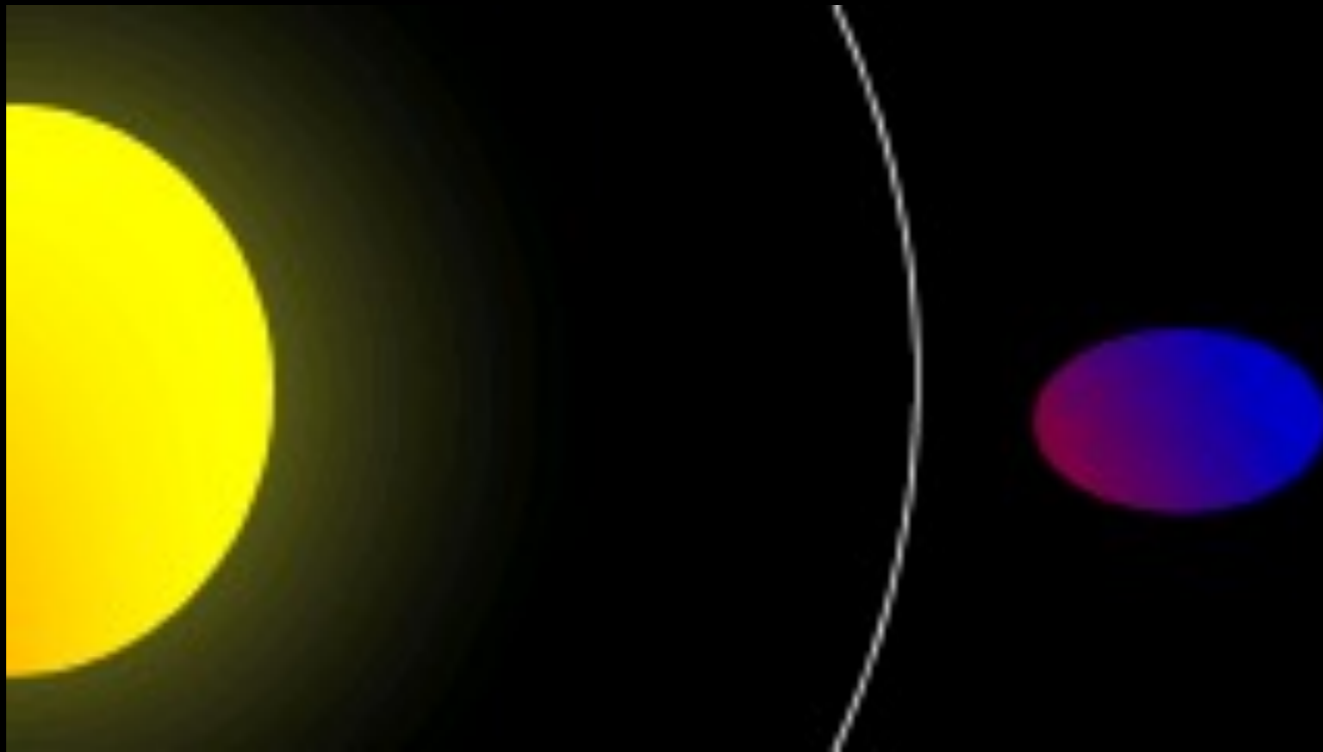
# Roche mörkin I

- Höfum hnött á braut um stærri plánetu
- Massinn er hér um bil kúlulaga vegna eigin þyngdarafis



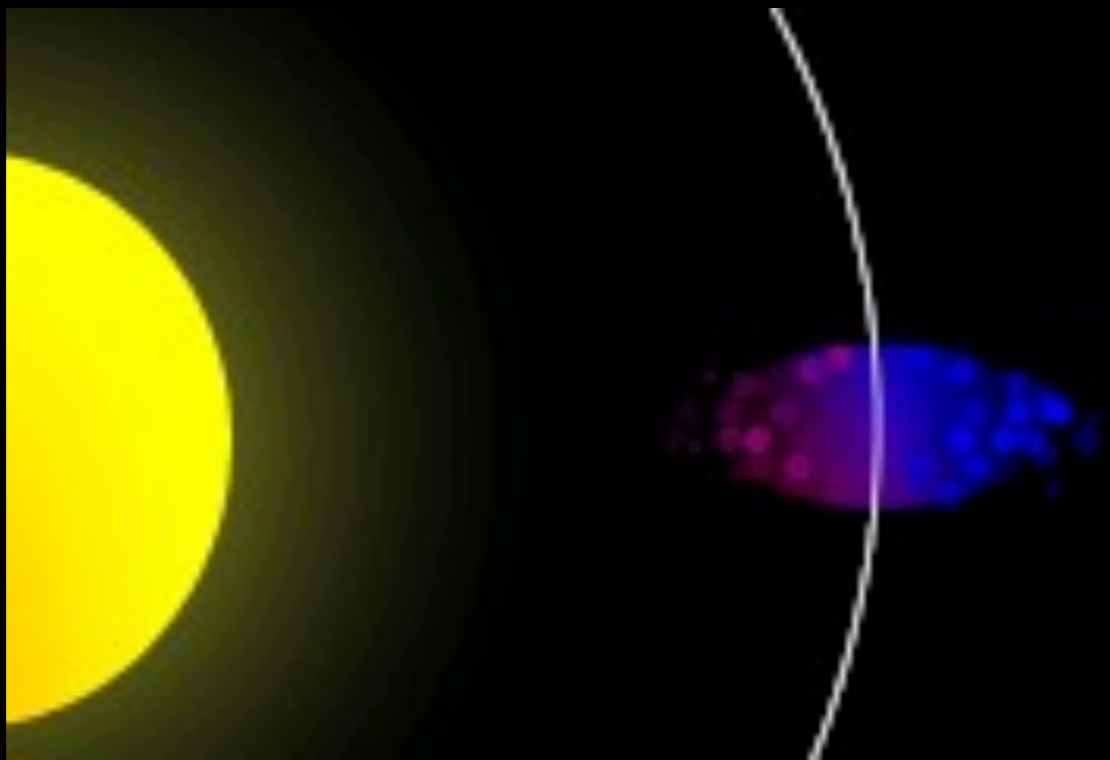
# Roche mörkin II

- Þegar hnötturinn færast nær aukast flóðkraftar á hnöttinn
- Hann aflagast, dæmi: Íó



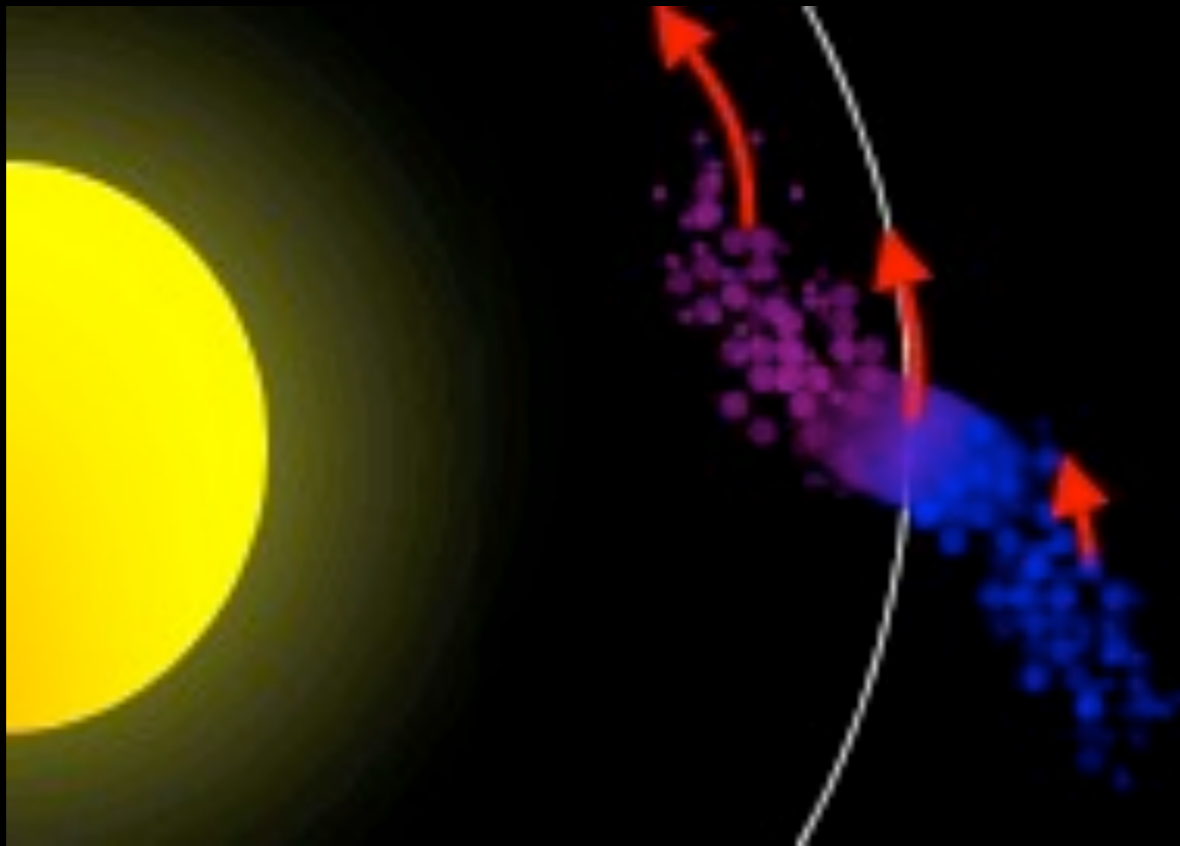
# Roche mörkin III

- Innan Roche-markanna er nægir þyngdarkraftur hnattarins ekki til að halda honum saman
- Flóðkraftarnir slíta hann sundur



# Roche mörkin IV

- Innan Roche-markanna er nægir þyngdarkraftur hnattarins ekki til að halda honum saman
- Flóðkraftarnir slíta hann sundur



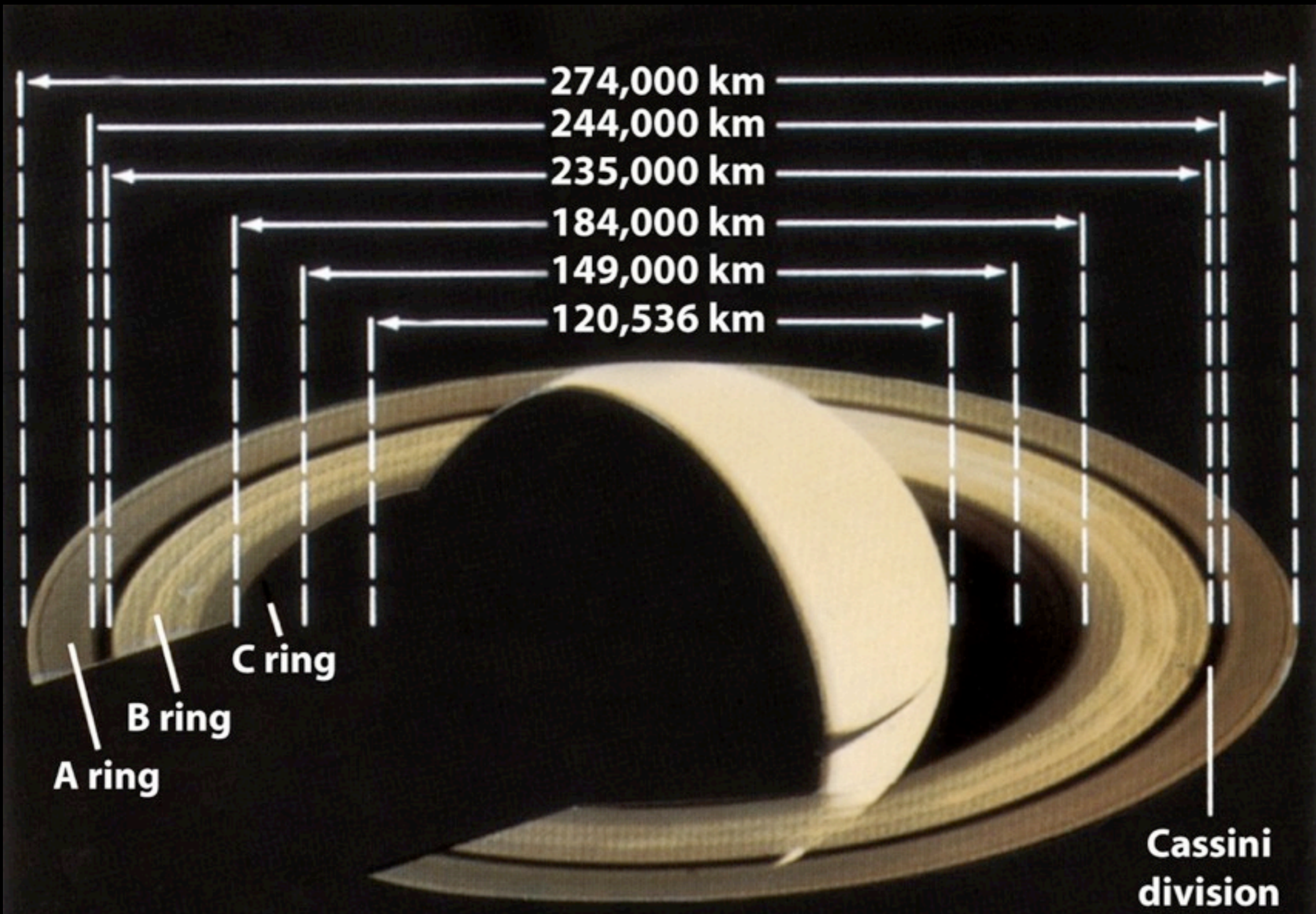


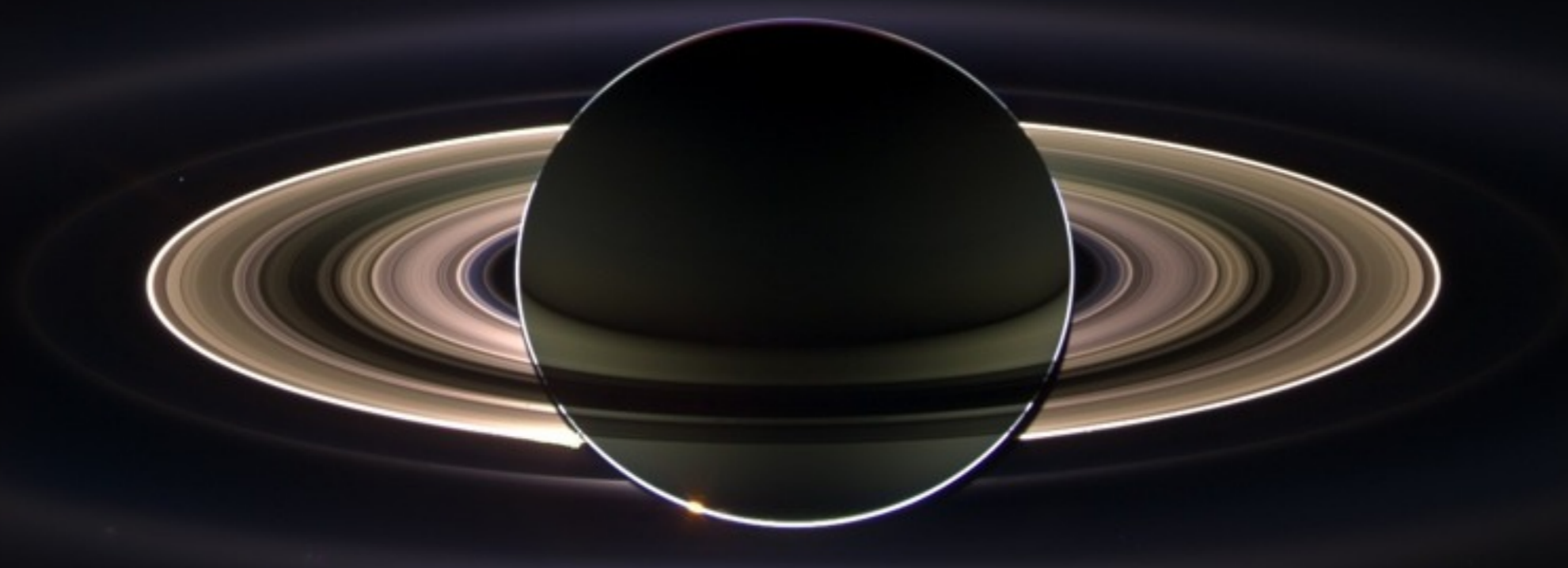
# Roche mörkin V

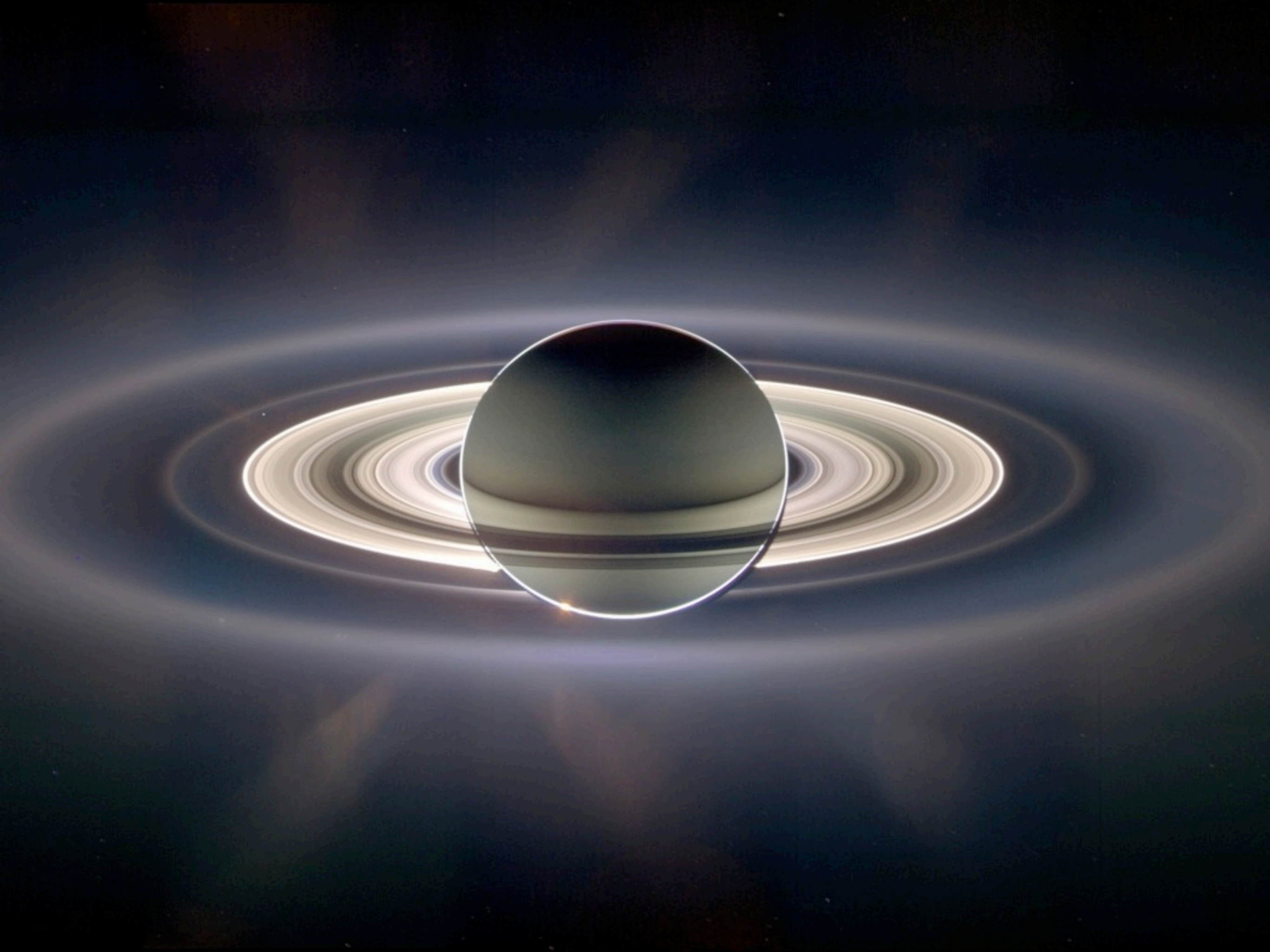
- Skv. lögmálum Keplers, hreyfist efnið sem er nær móðurhnettinum hraðar en það sem er utar



# Stærð hringanna







From Ecuador



From Polynesia



From Alaska

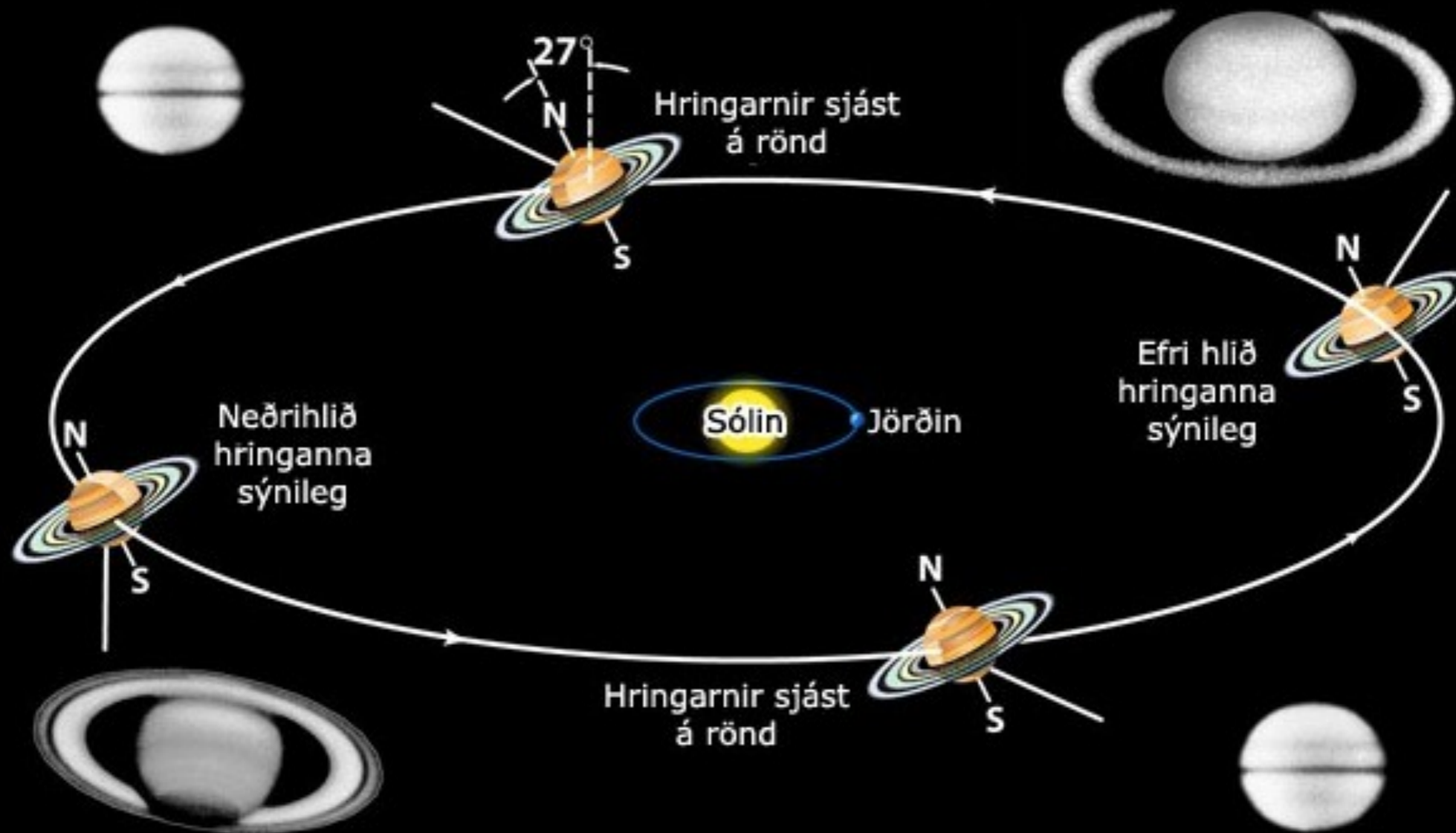


From Washington D.C

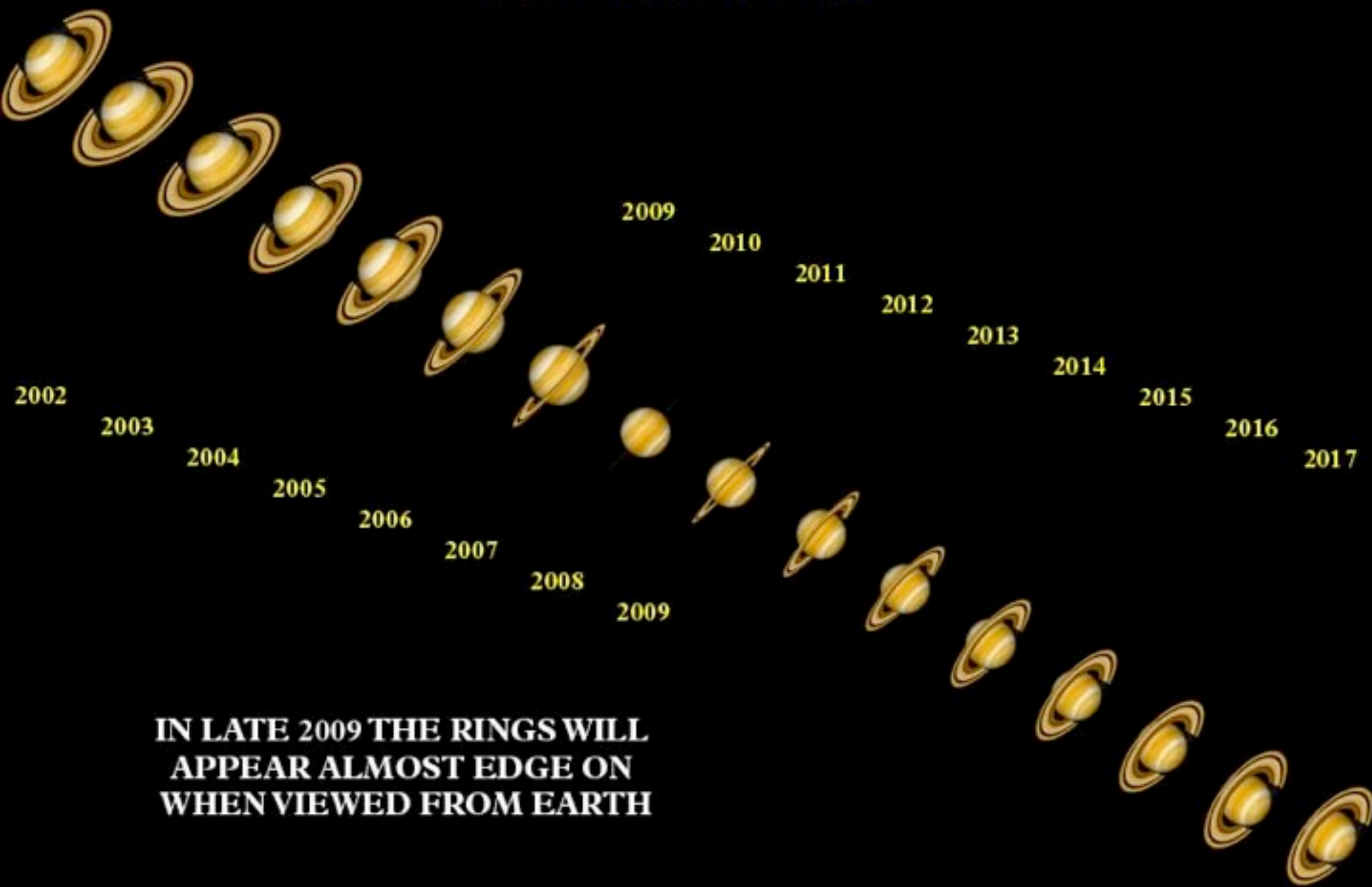


If Earth had rings like Saturn.

# Sjáum við alltaf hringana?



# SHOWING THE CHANGING ASPECTS OF SATURN'S RINGS FROM 2002 TO 2017



**IN LATE 2009 THE RINGS WILL  
APPEAR ALMOST EDGE ON  
WHEN VIEWED FROM EARTH**

# Veifaðu Satúrnusi 2013!





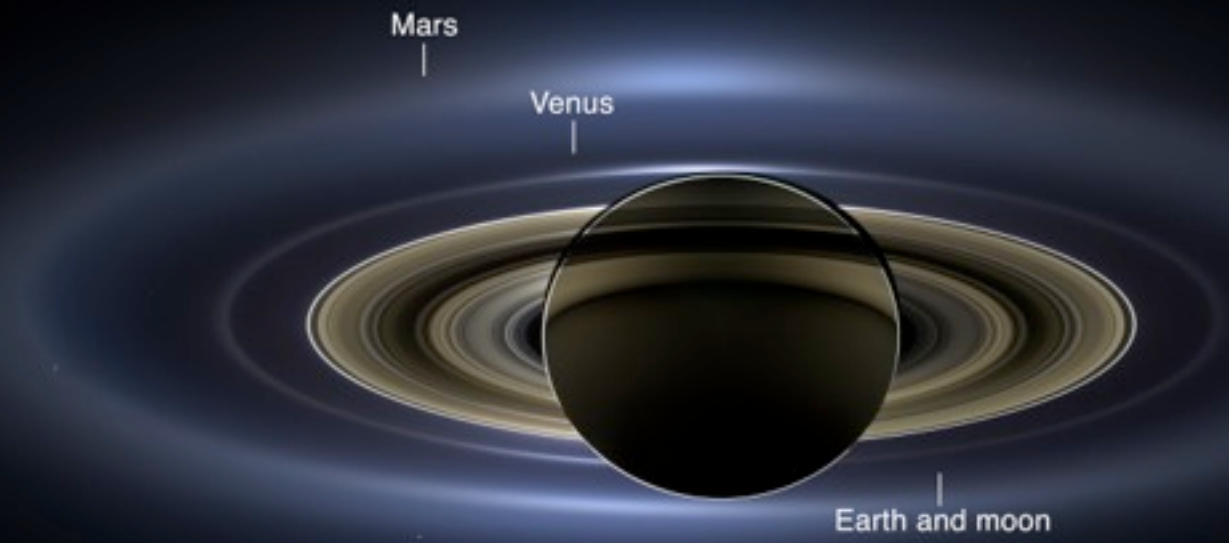
# Smækkuð mynd frá 19. júlí 2013



# Smækkuð mynd af áhugafólki á jörðinni





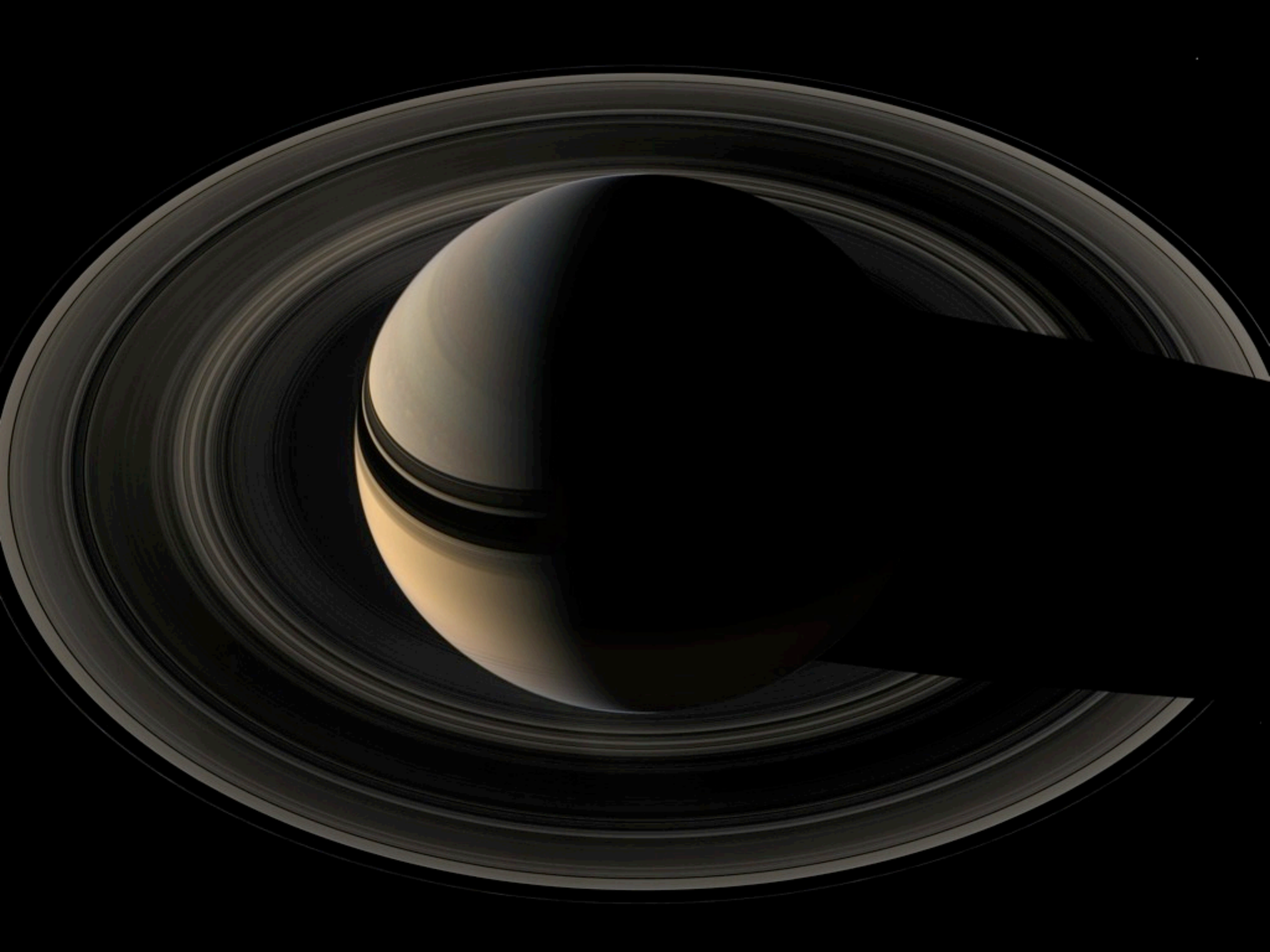


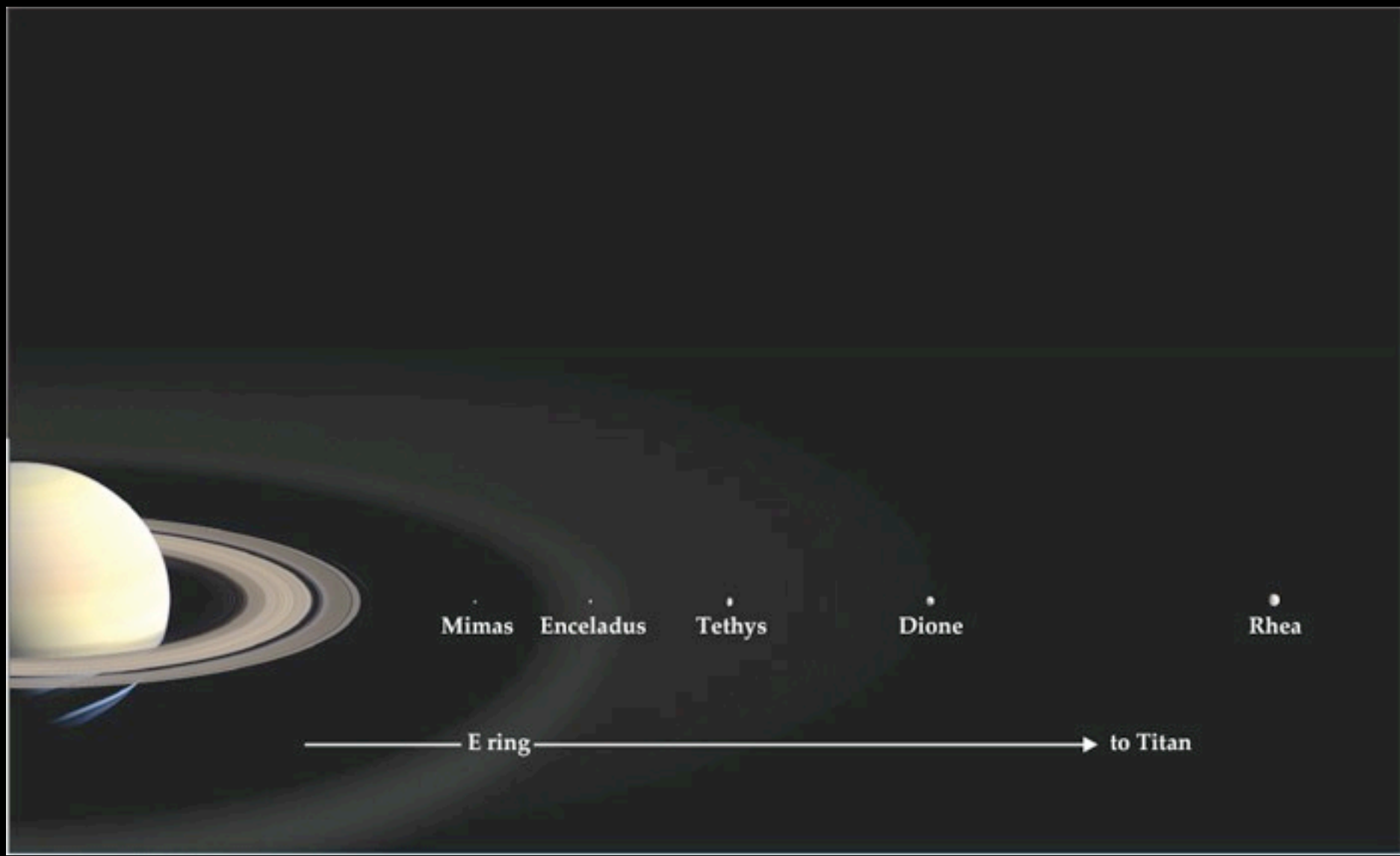
Mars

Venus

Earth and moon







Mimas

Enceladus

Tethys

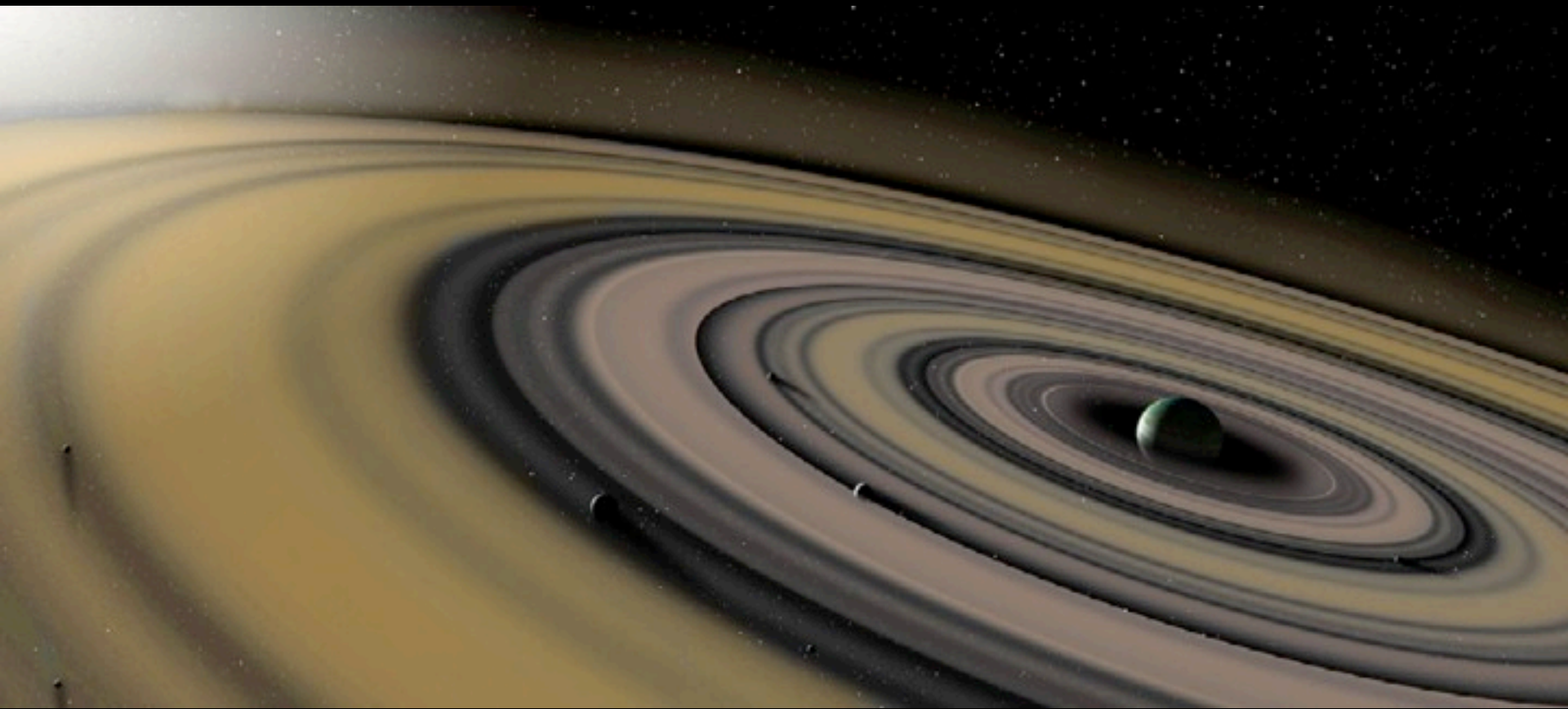
Dione

Rhea

E ring

to Titan

„Smalatingl“ valda eyðum á milli hringanna (sýn listamannsins)





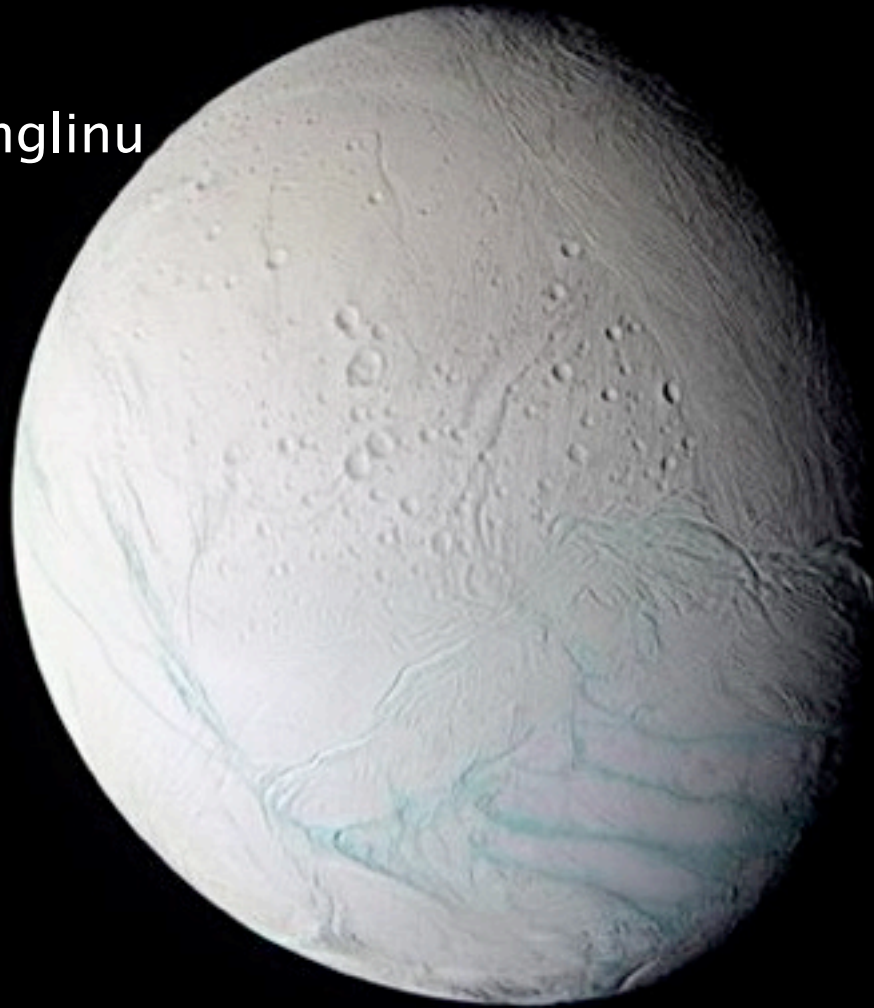
Dafnis er eitt af „smalatinglunum“



# Enkeladus

Cassini flaug framhá tunglinu

2005

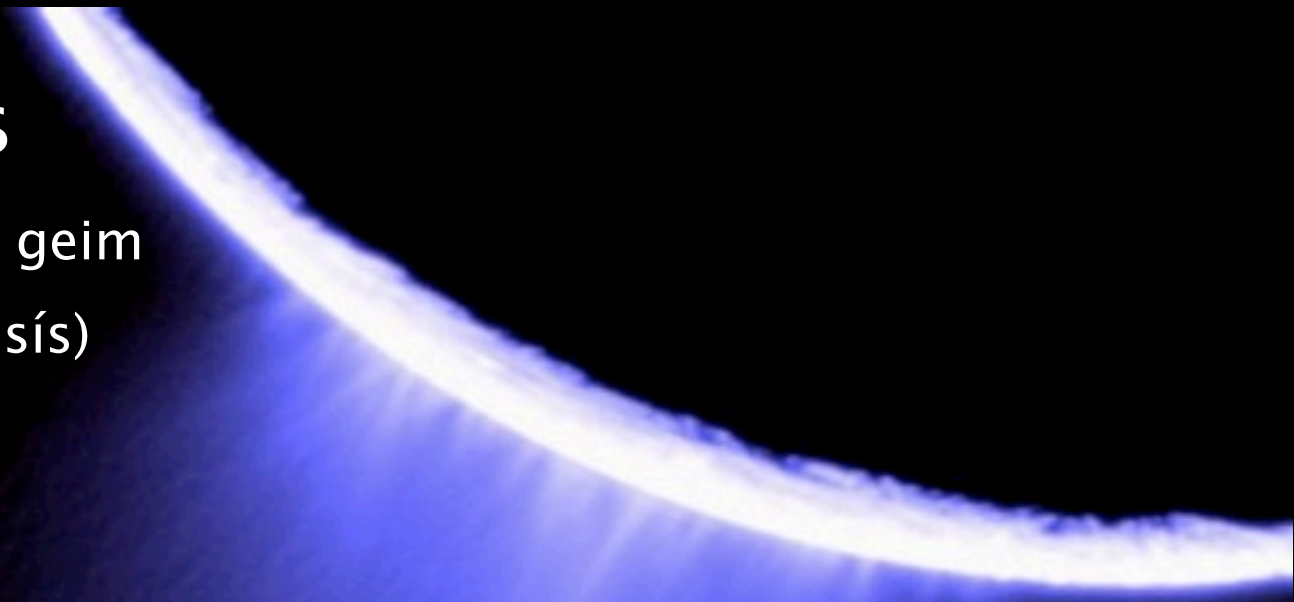


NASA/JPL/Space Science Institute

# Enkeladus

Vatnstrókar út í geim

(vatnsgufa/vatnsís)

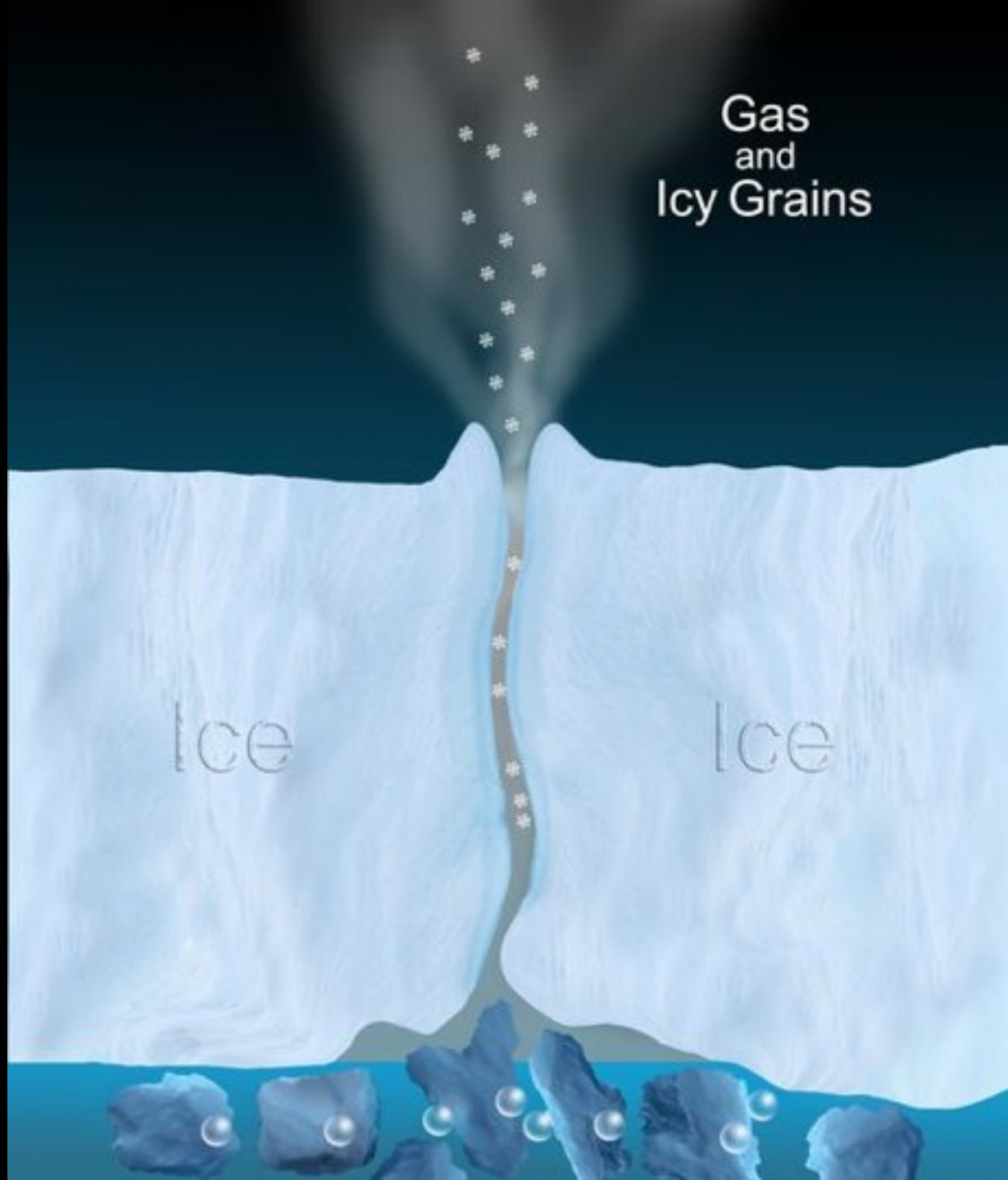




Gas  
and  
Icy Grains

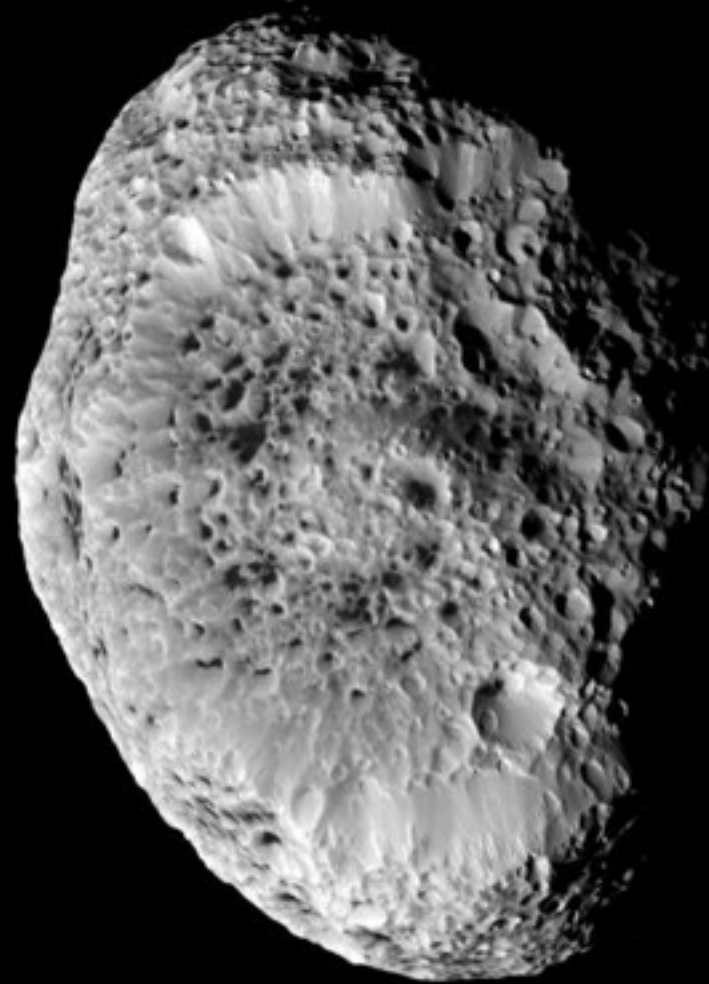
Ice

Ice

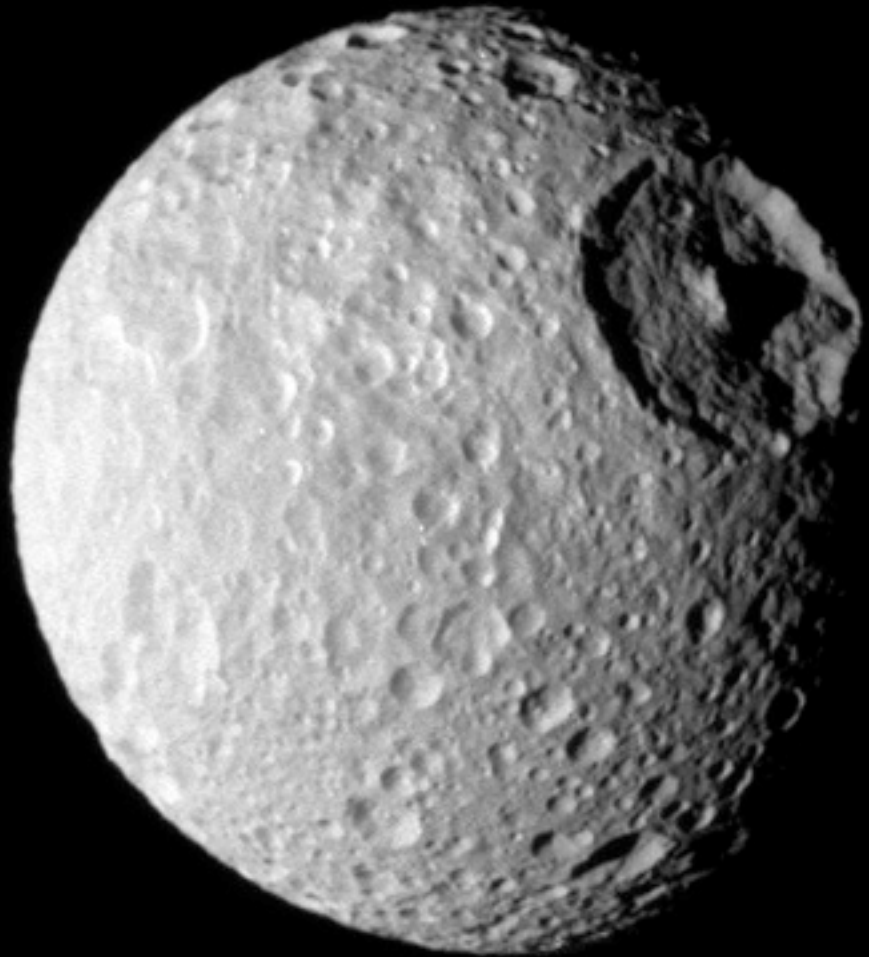


# Hyperion

–ör eftir loftsteina

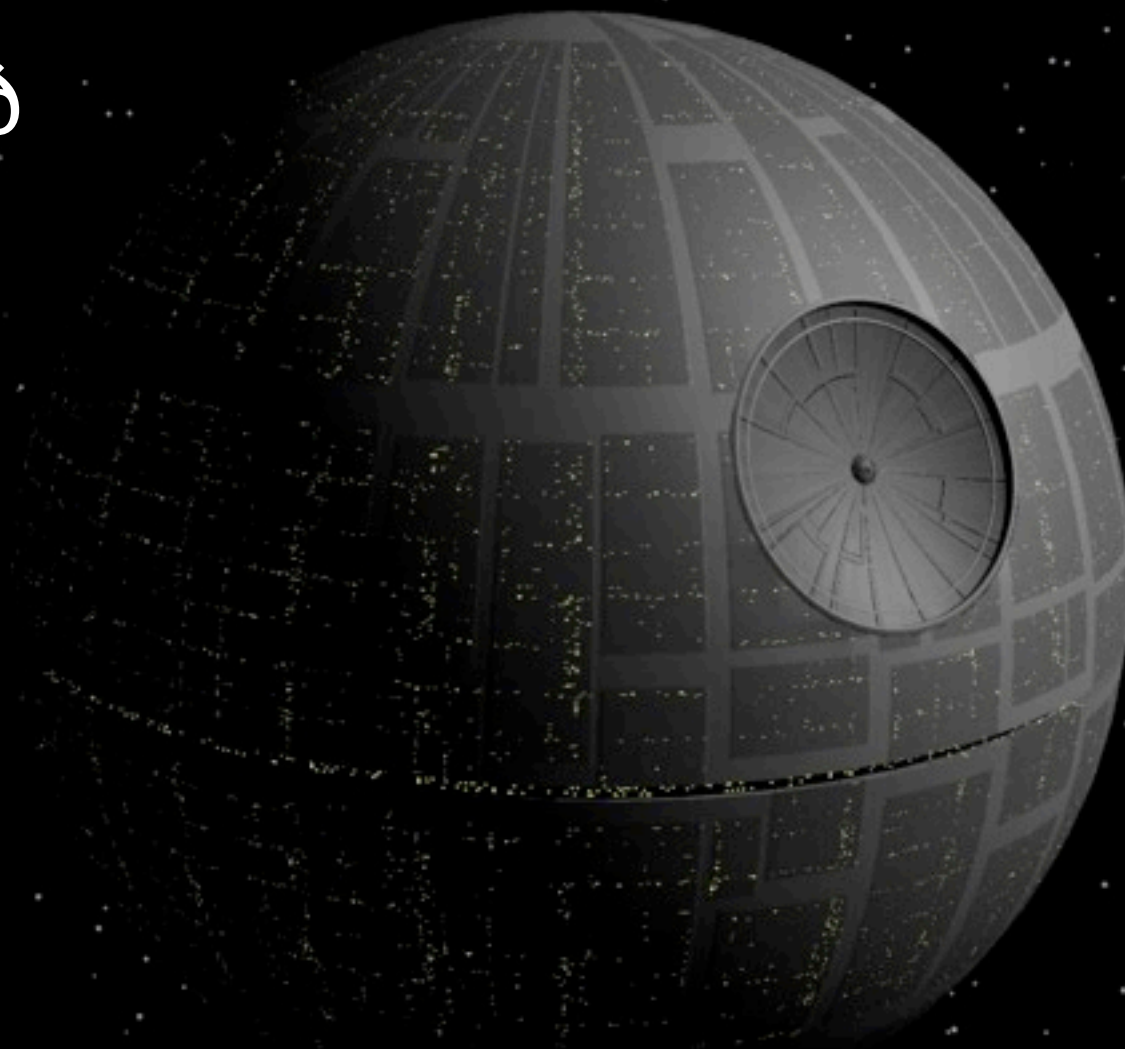


# Mímas



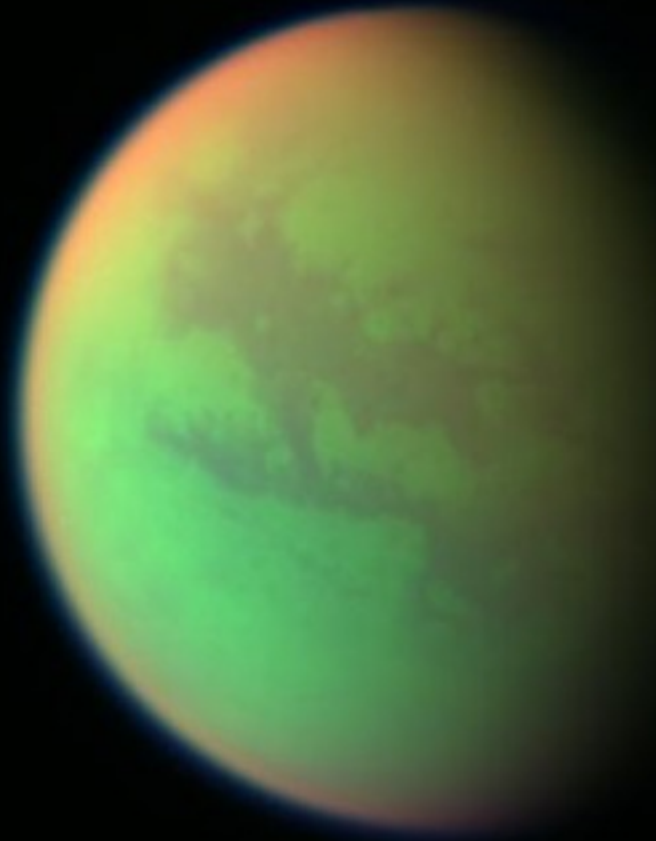
MIMAS  
PORTRAIT

Helstirnið





# Títan



NASA/JPL/Space Science Institute

# Huygens lendir á Títan – sýn listamannsins



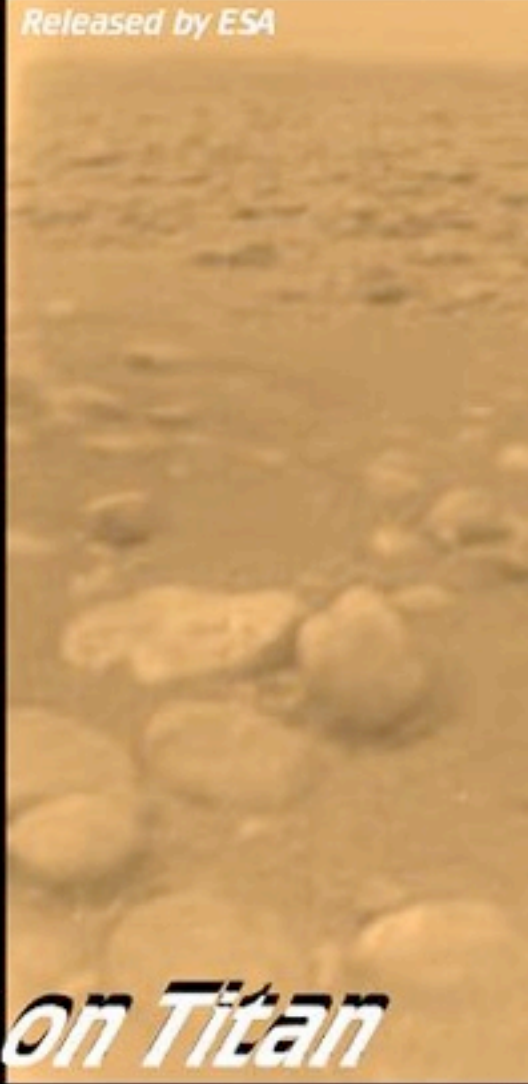
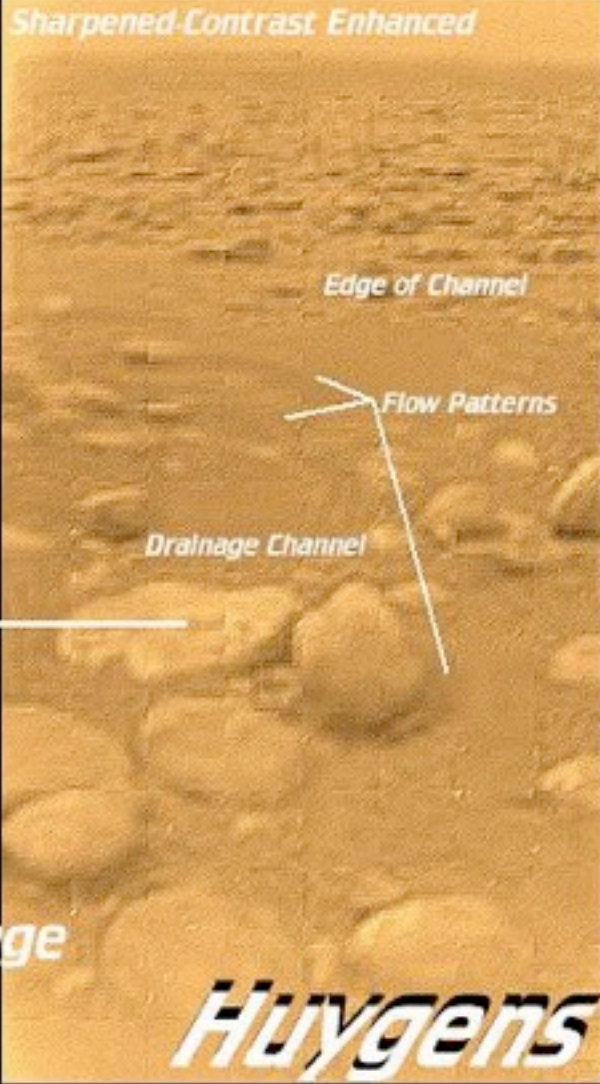
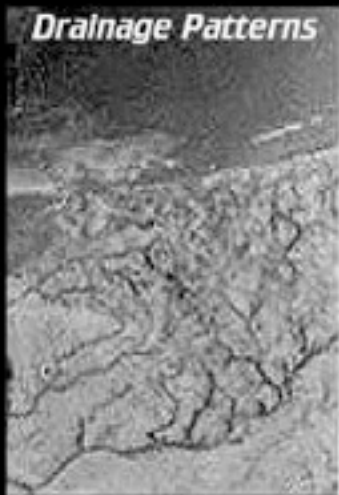
NASA/JPL/ESA

Huygens lendir á Títan – myndskaið

[http://www.jpl.nasa.gov/video/?  
id=1182](http://www.jpl.nasa.gov/video/?id=1182)

# Yfirborð Títans

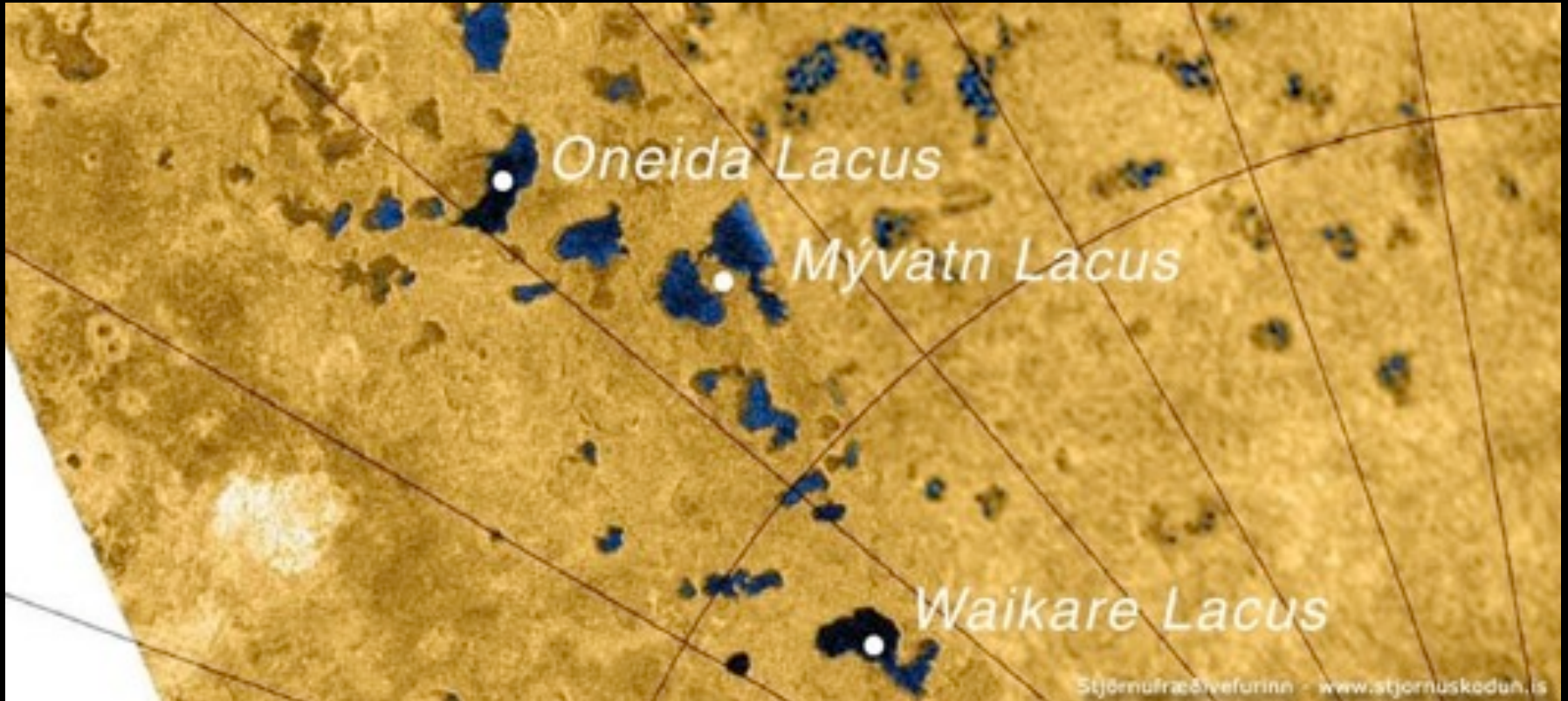




*First Color Image*

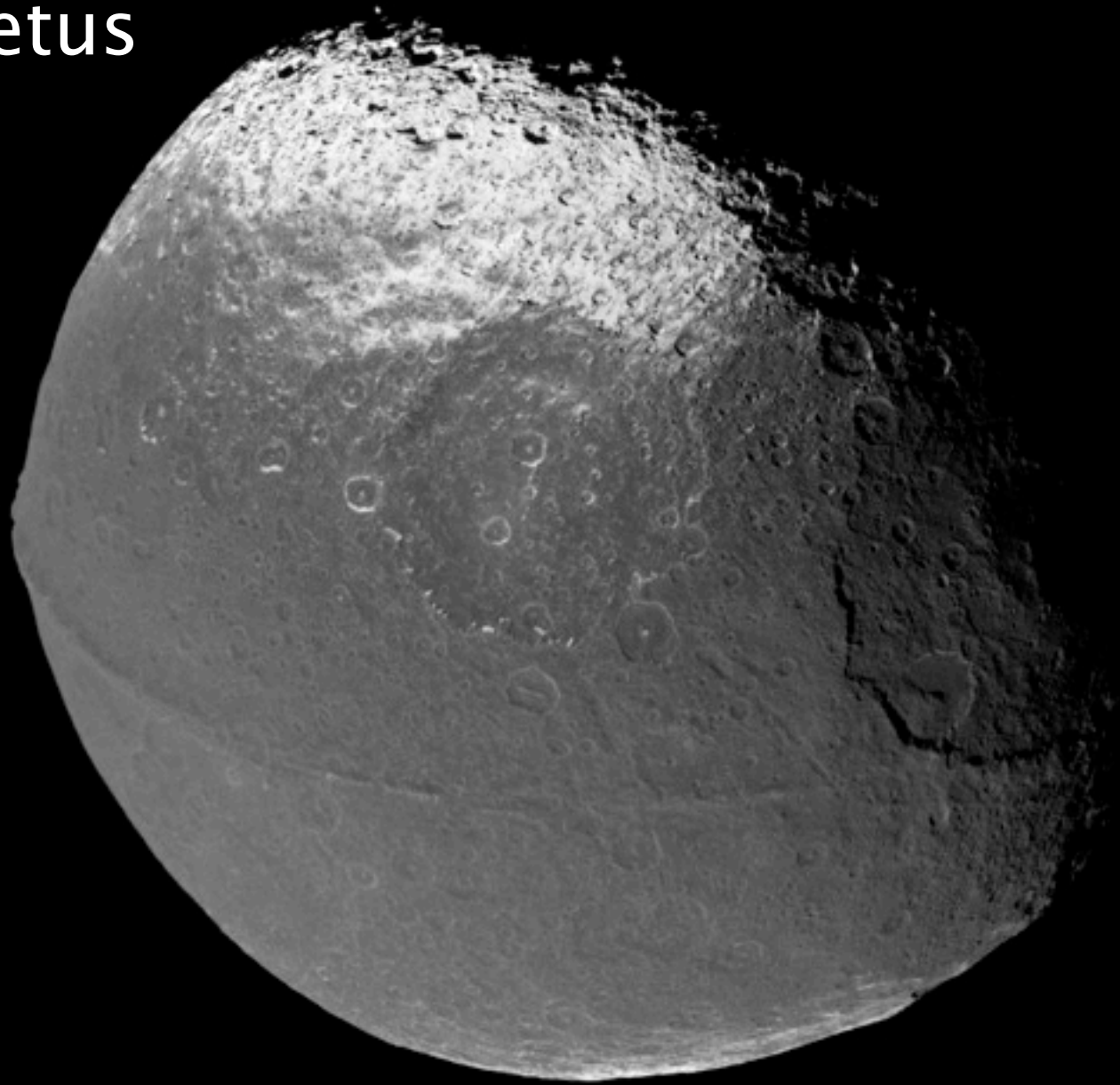
*Huygens on Titan*

# Mývatn á Títan!

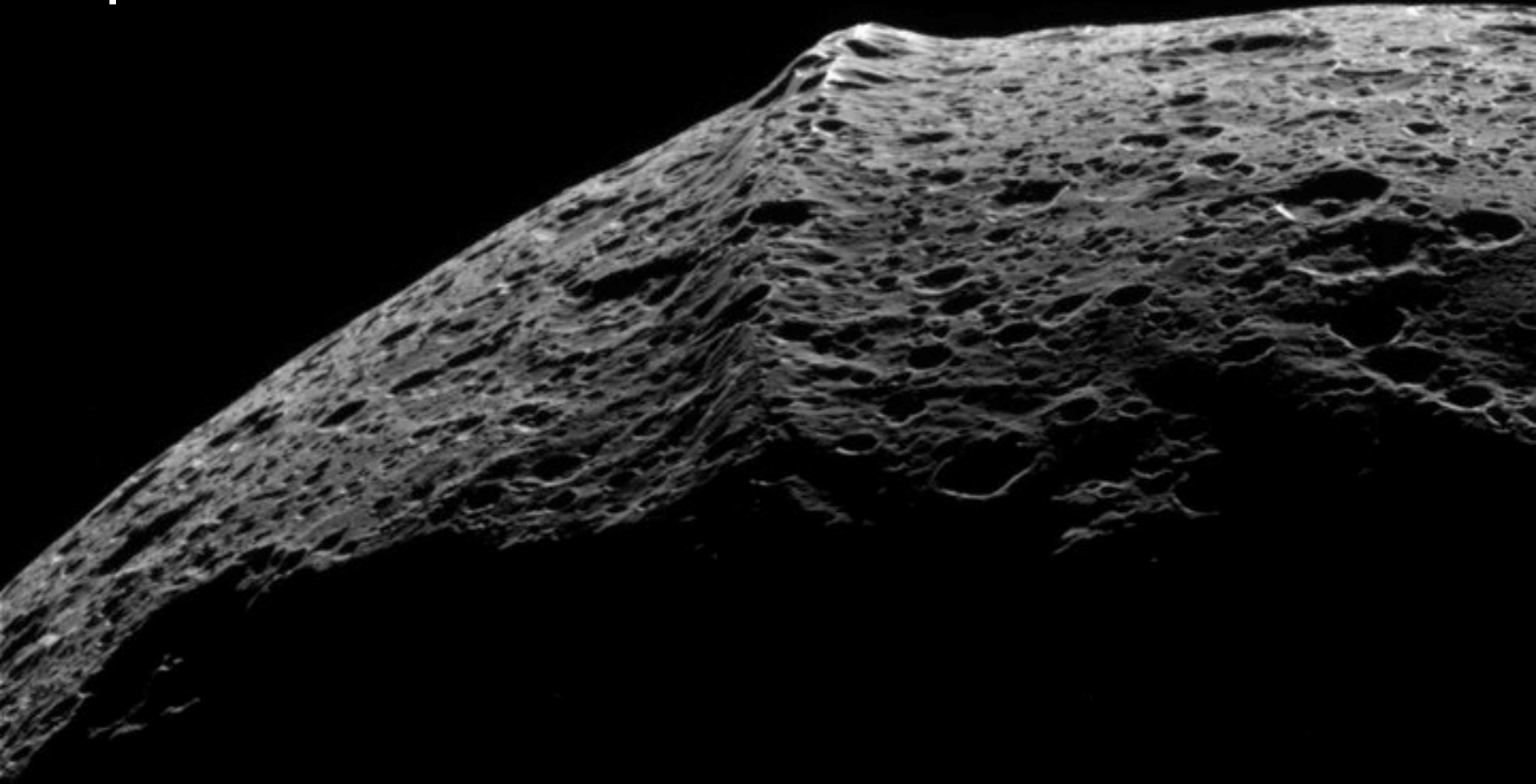


Líklega úr etani/metani!

Íapetus

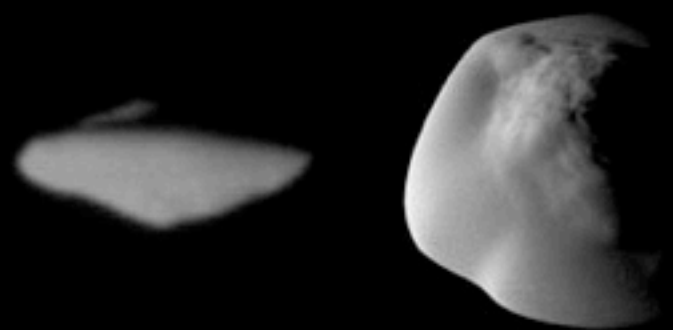


# Miðbaugshryggurinn á Íapetusi





Atlas



Pan



20 km

