



**OSIRIS-REx**  
ASTEROID SAMPLE RETURN MISSION

# Initial Perspectives on Surface Geology of (101955) Bennu including Comparisons to (162173) Ryugu

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Schwartz

And The OSIRIS-REx Team



# Outline

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- The first look at the global geology of Bennu
  - Craters, Boulders, Regolith and Linear Features
- Nearly global view of Bennu with maximum 30cm/pixel resolution
  - Will eventually be 5cm/pixel globally
- Thanks to:
  - Regolith Development Working Group mapping efforts
  - Image Processing Working Group for image analysis
  - OCAMs team for spectacular images
  - Altimetry Working Group for shape models
  - Radio Science Working Group for mass and slopes
  - The entire OSIRIS-Rex team

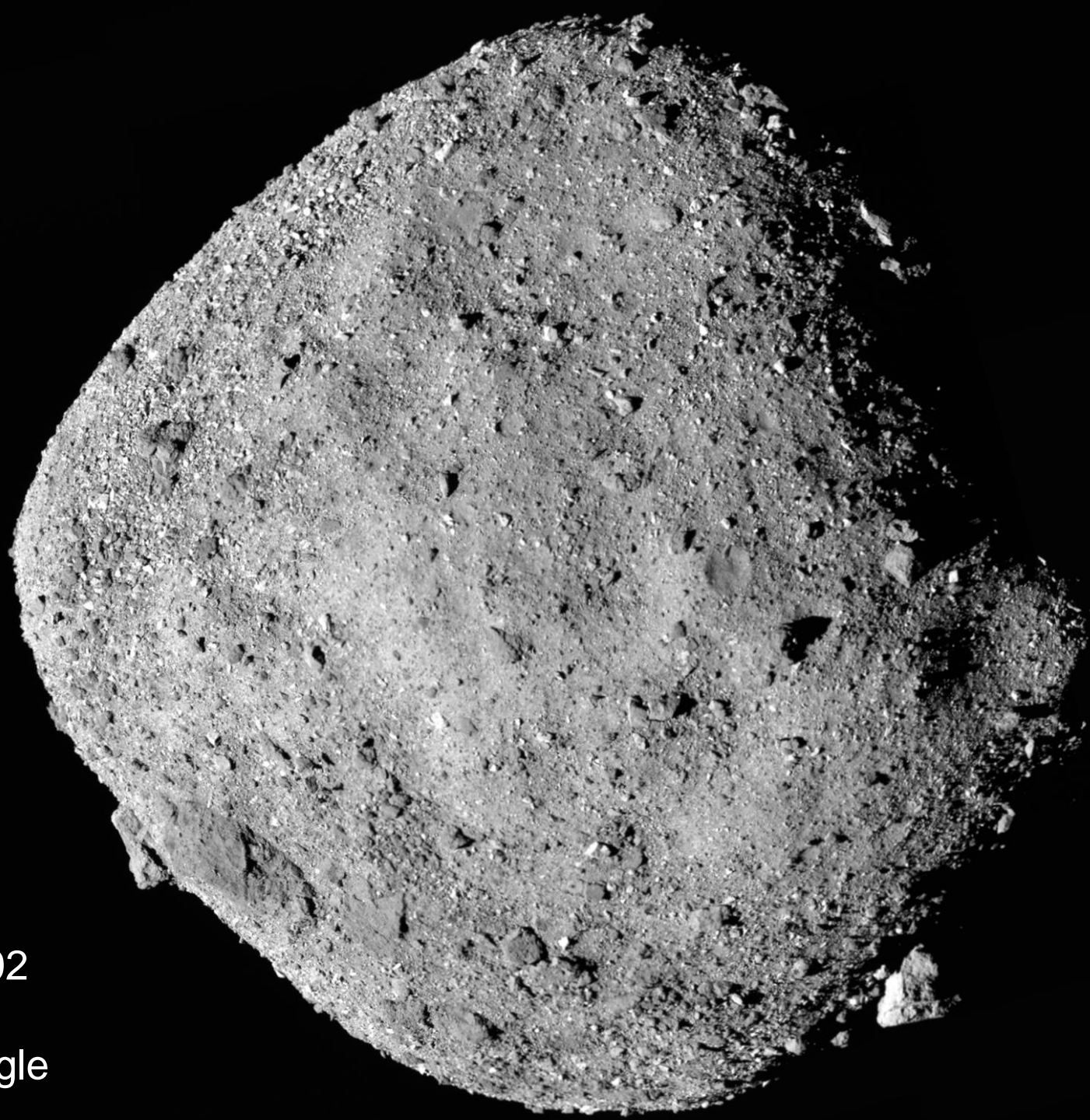
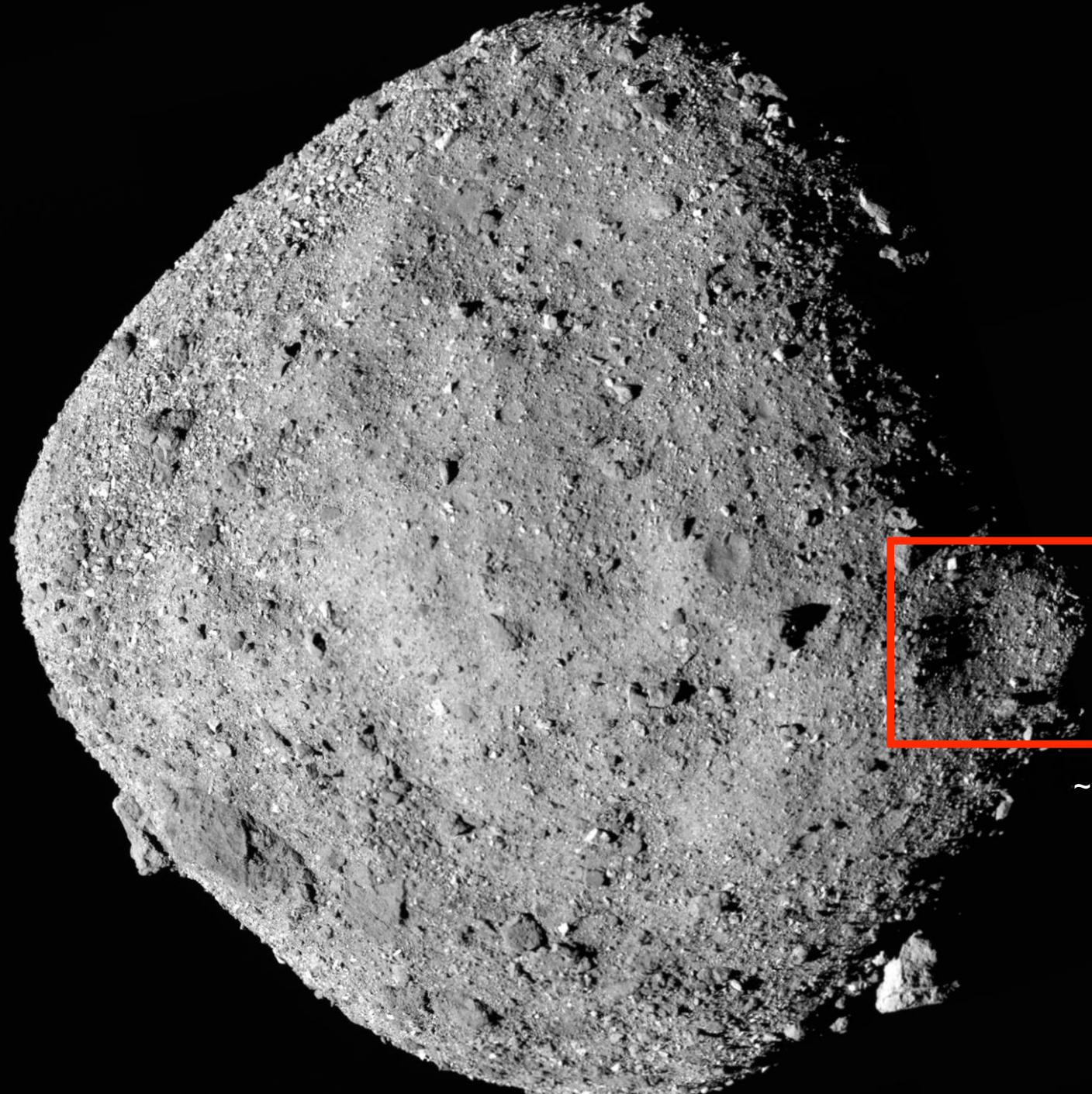


Image taken 12/02  
0.33 m/pixel  
48 deg phase angle

See talk by Della Guistina  
Poster by Barnouin



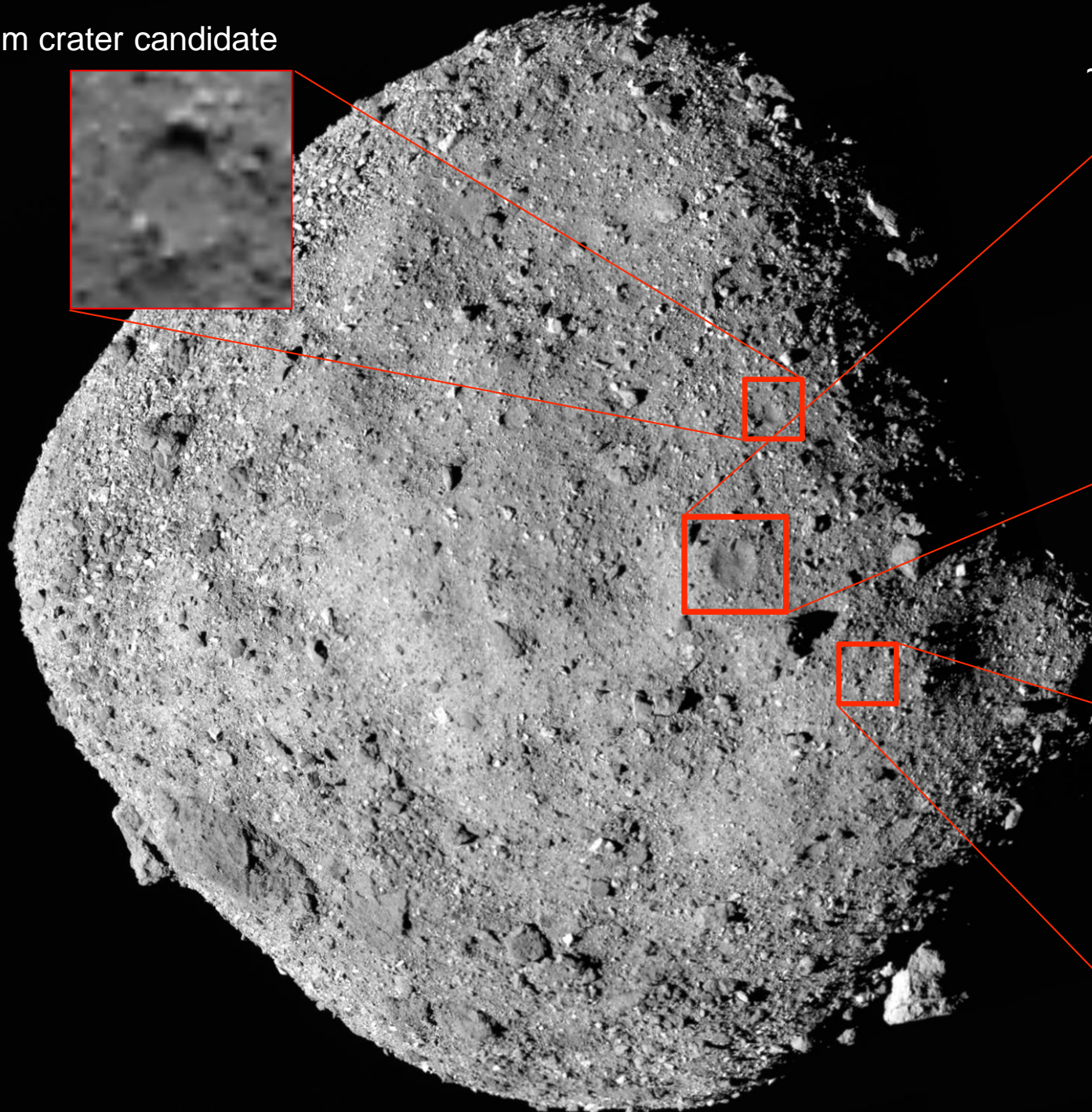
~120m crater candidate

See talk by Bierhaus  
and poster by Morota

~10m crater candidate



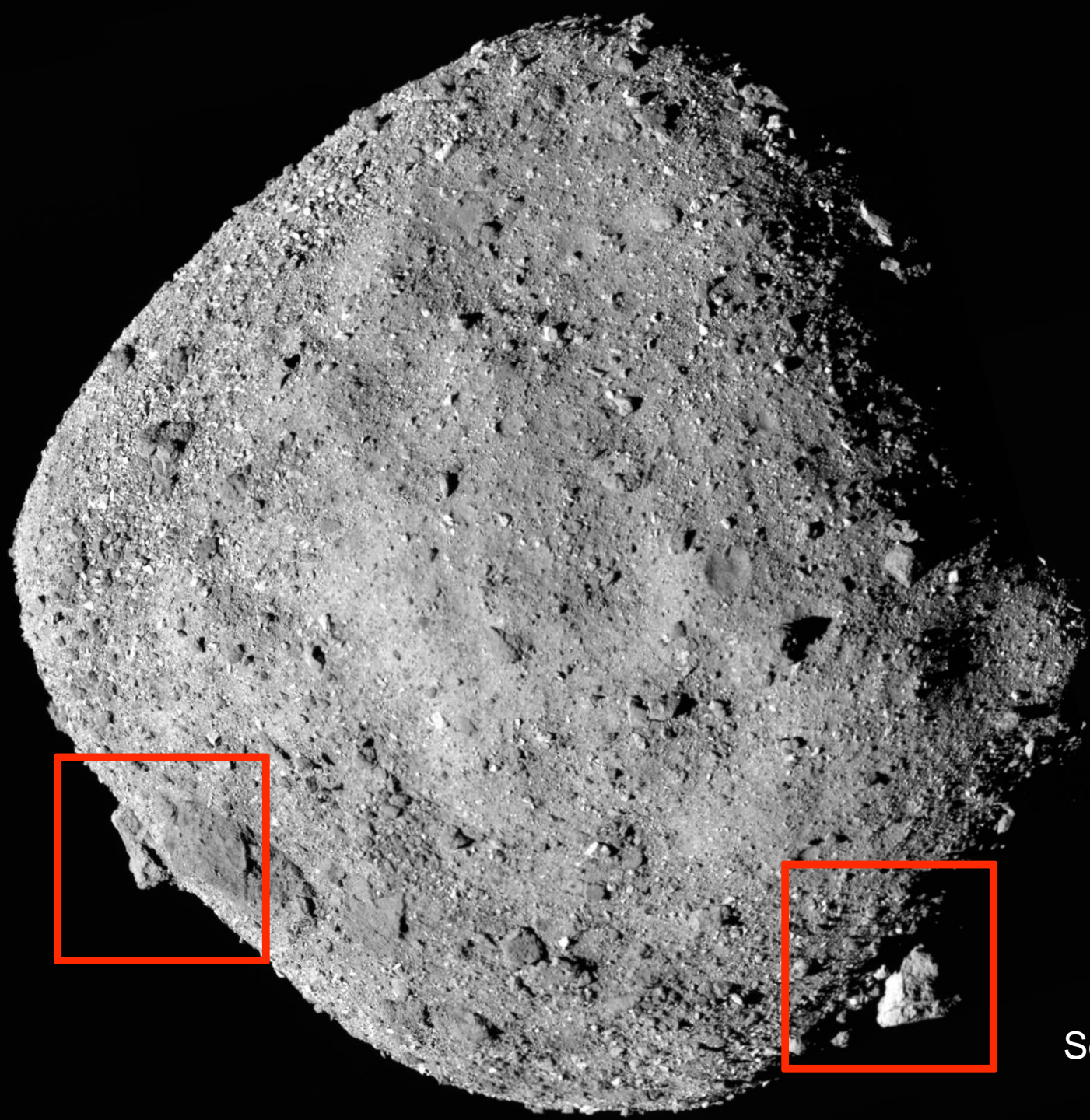
~20m crater candidate



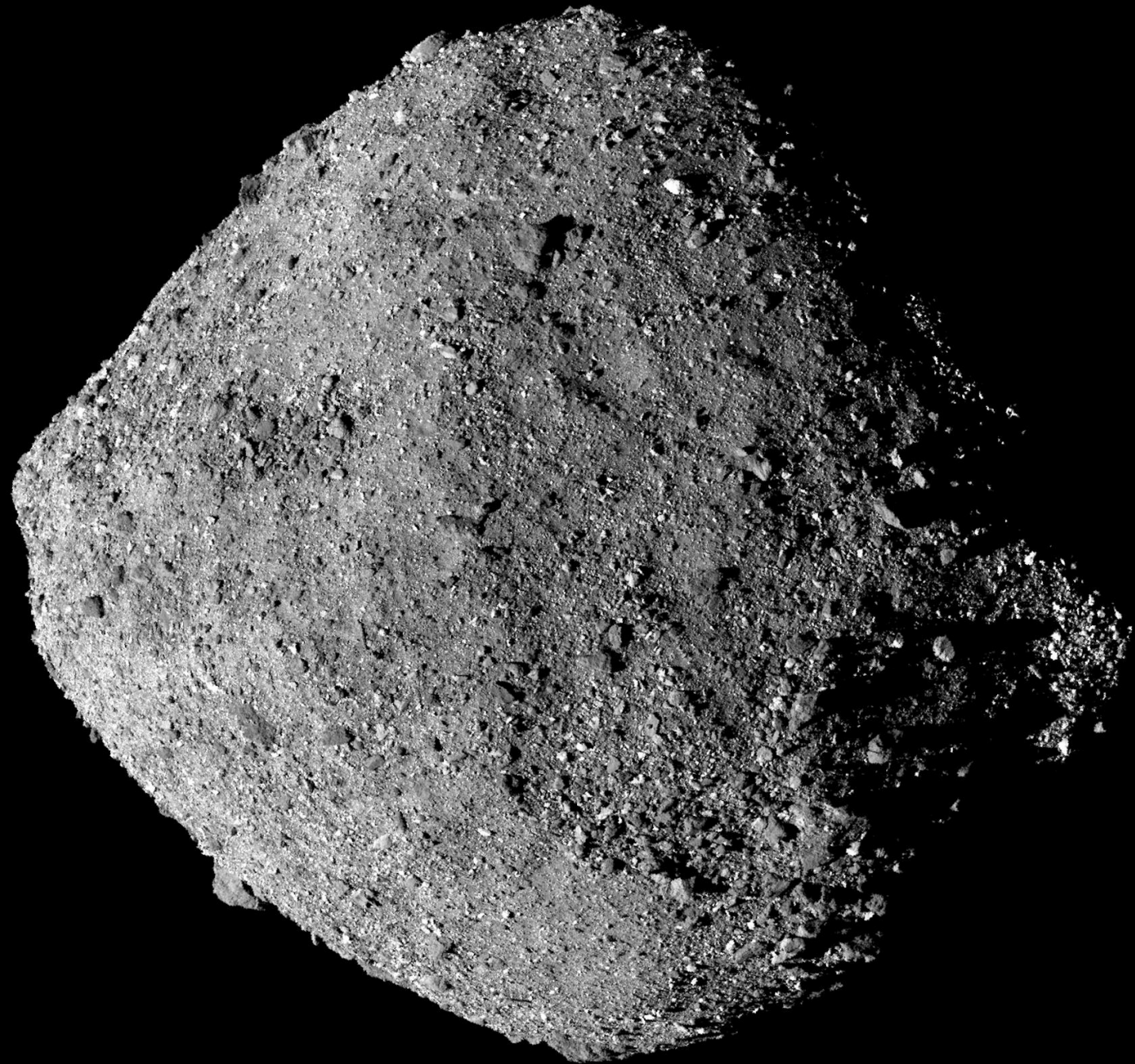
~10m crater candidate

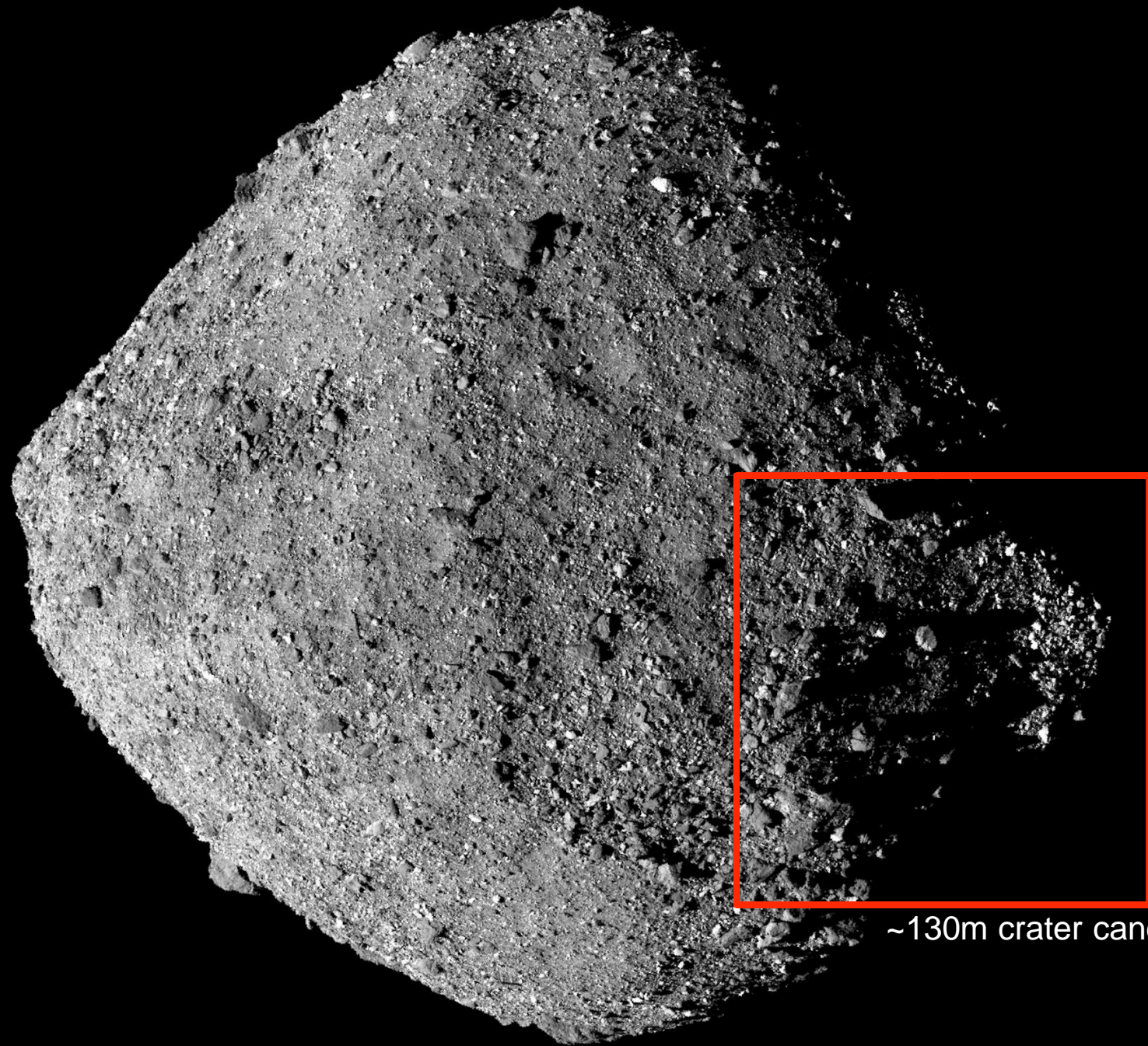


See talks by Bierhaus  
and Sakatani

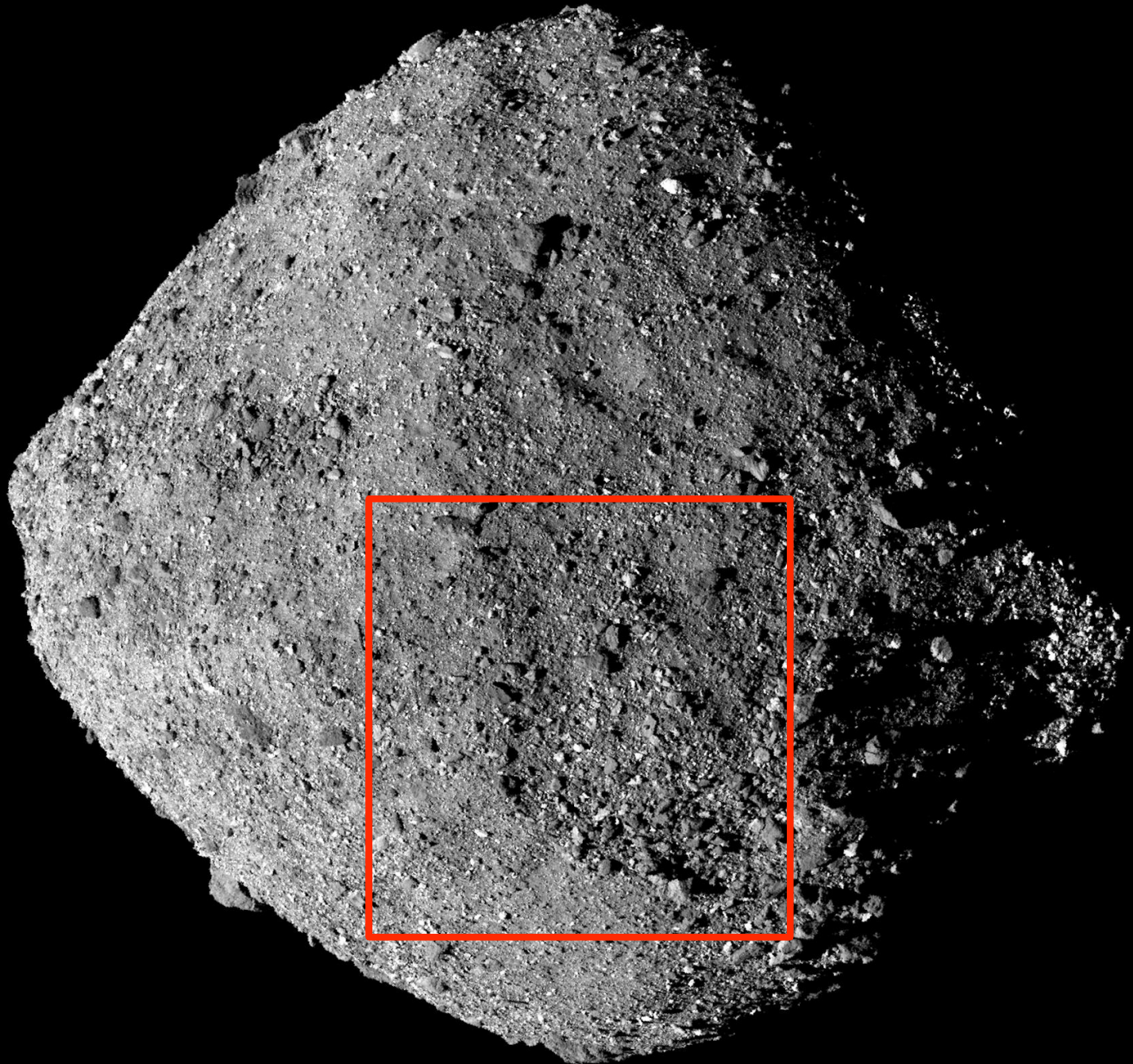


See talks by Burke and Schwartz  
Poster by Pajola





~130m crater candidate



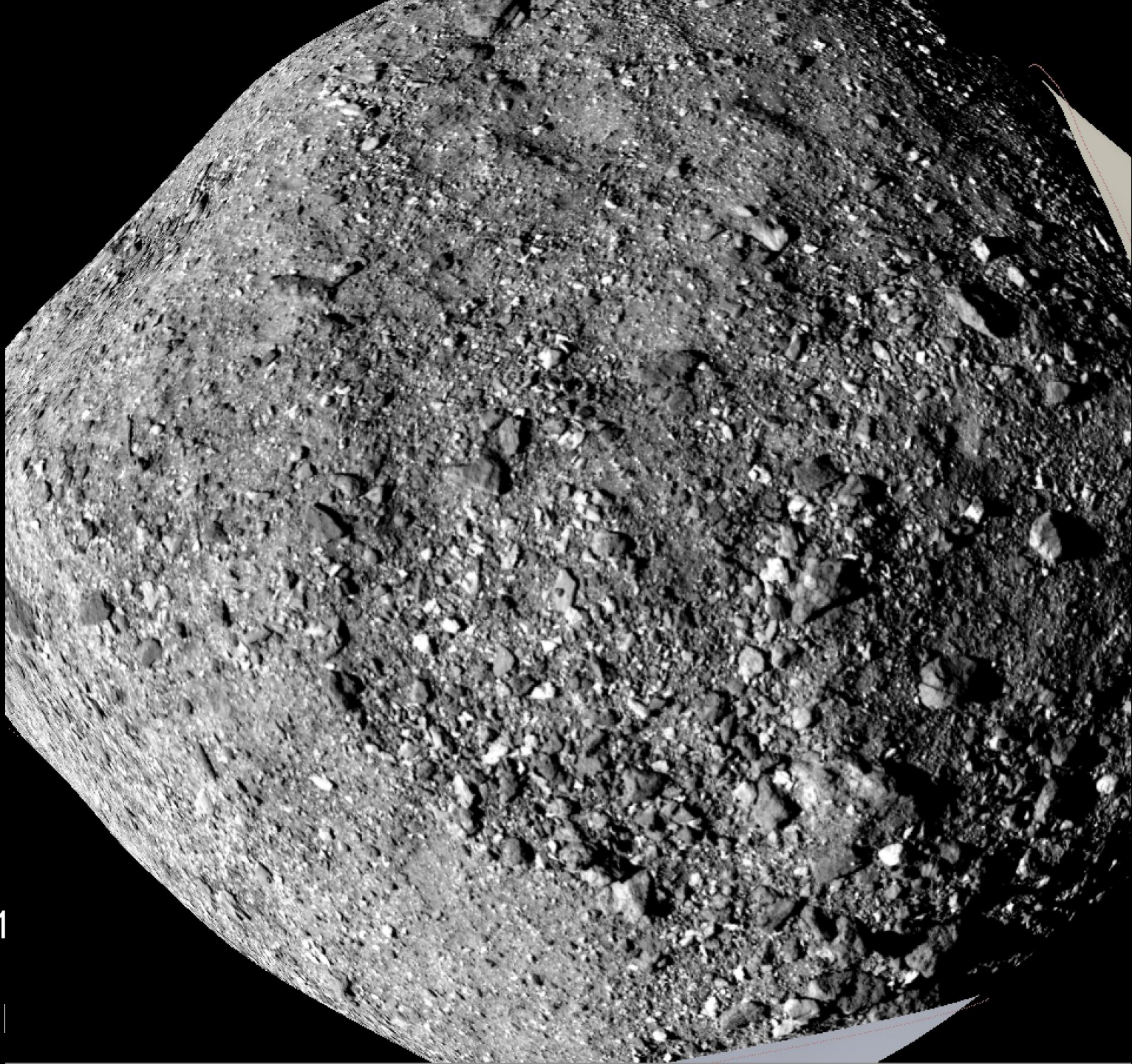


Image taken 12/01  
0.43 m/pixel  
34 deg phase angl

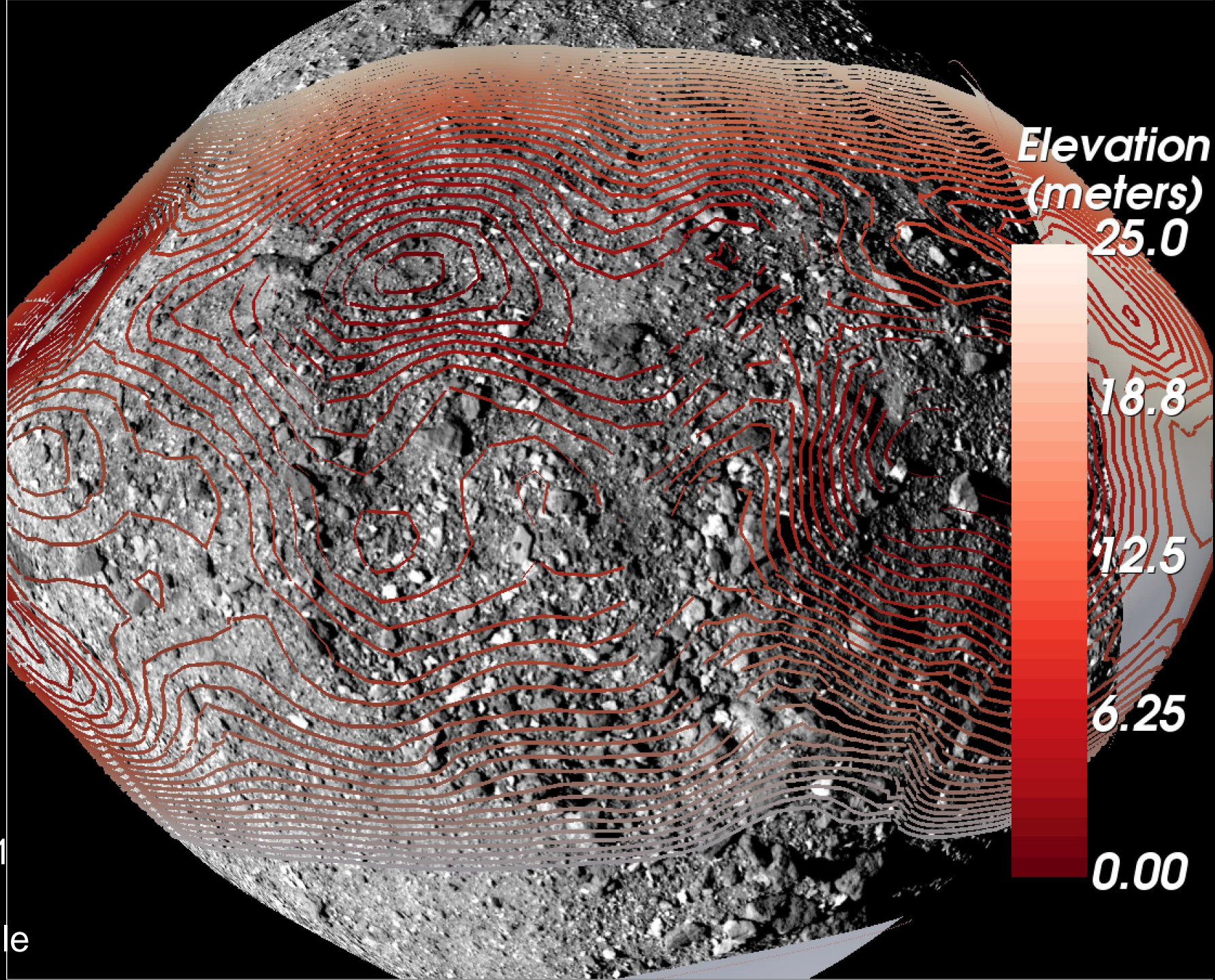


Image taken 12/01  
0.43 m/pixel  
34 deg phase angle



Local downslope direction



Sign of mass movement  
or burial

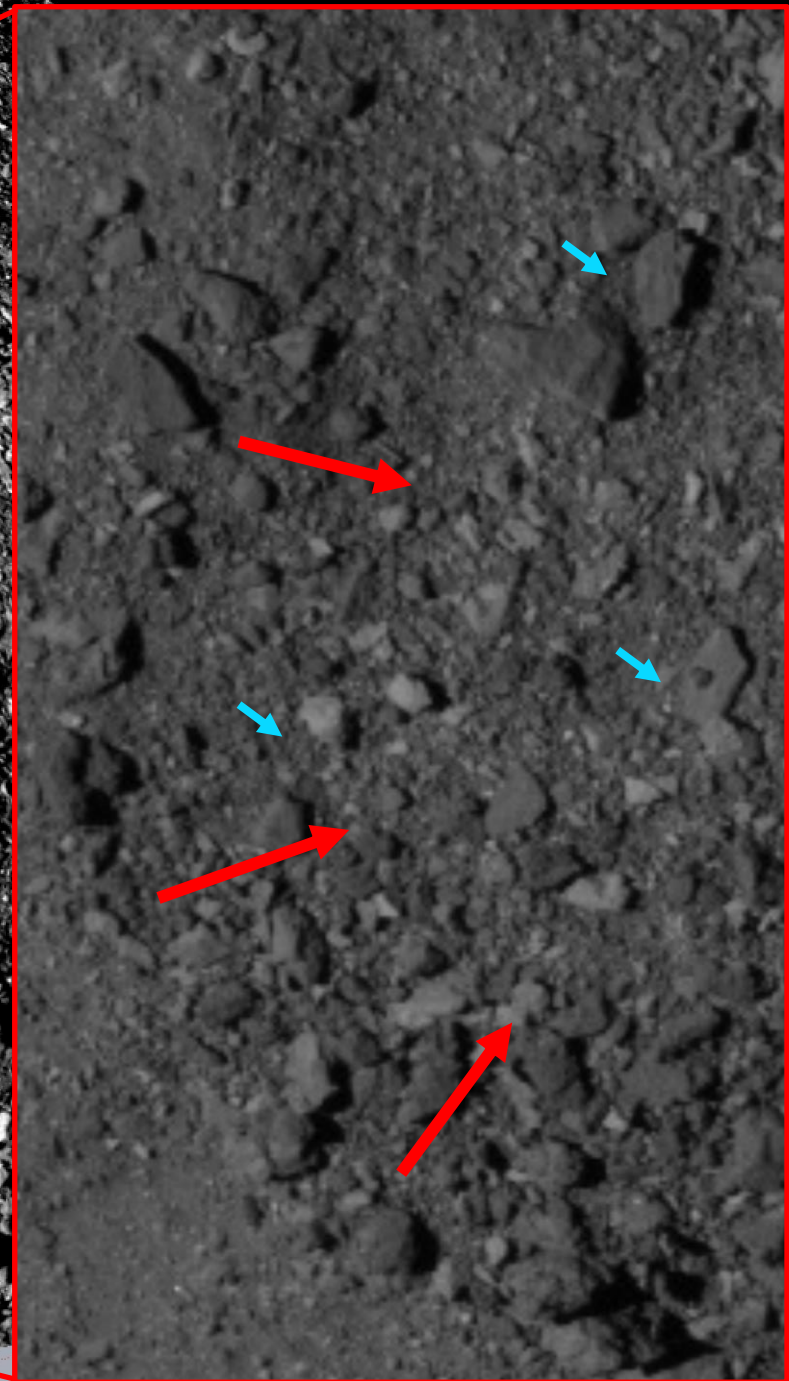
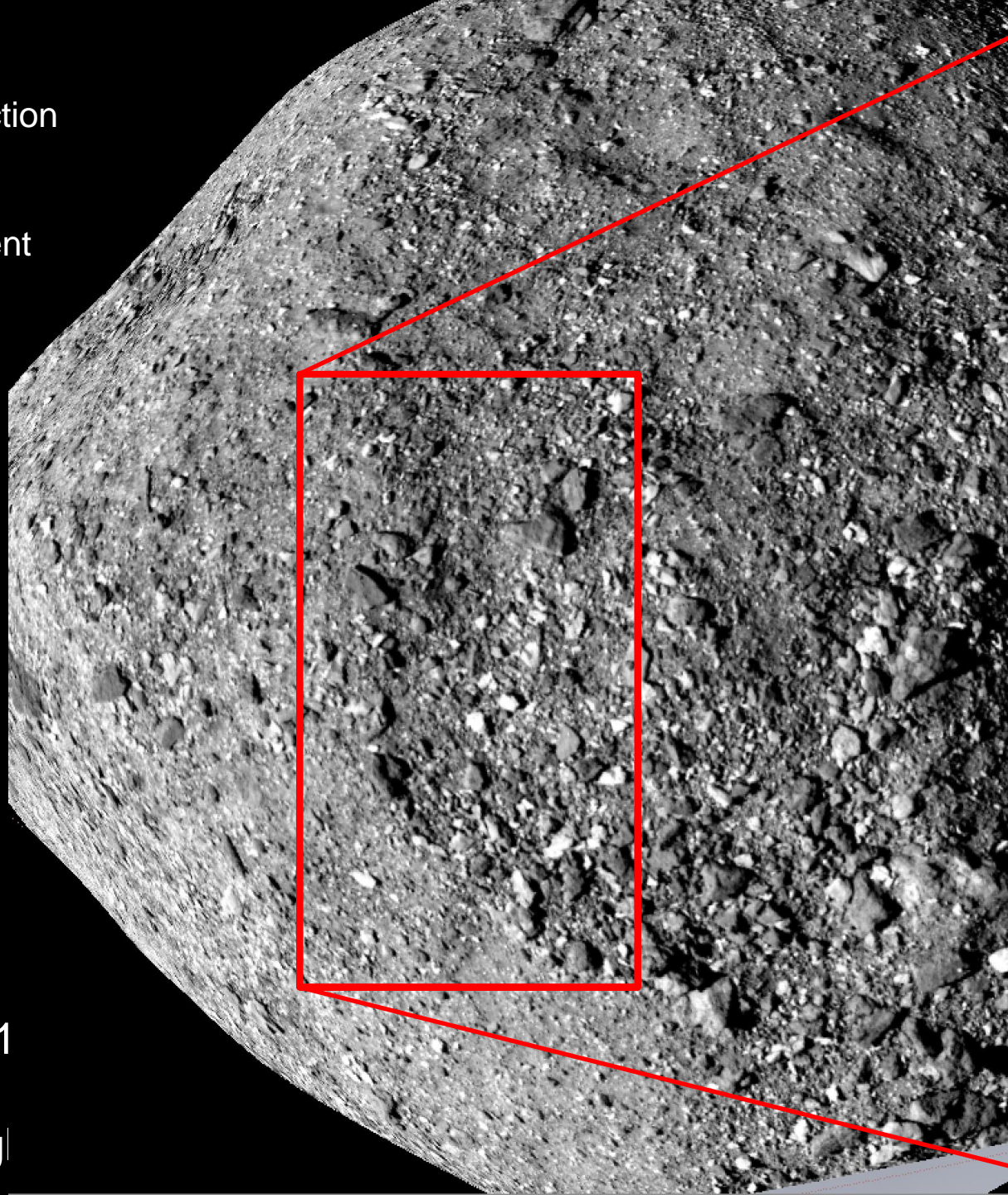
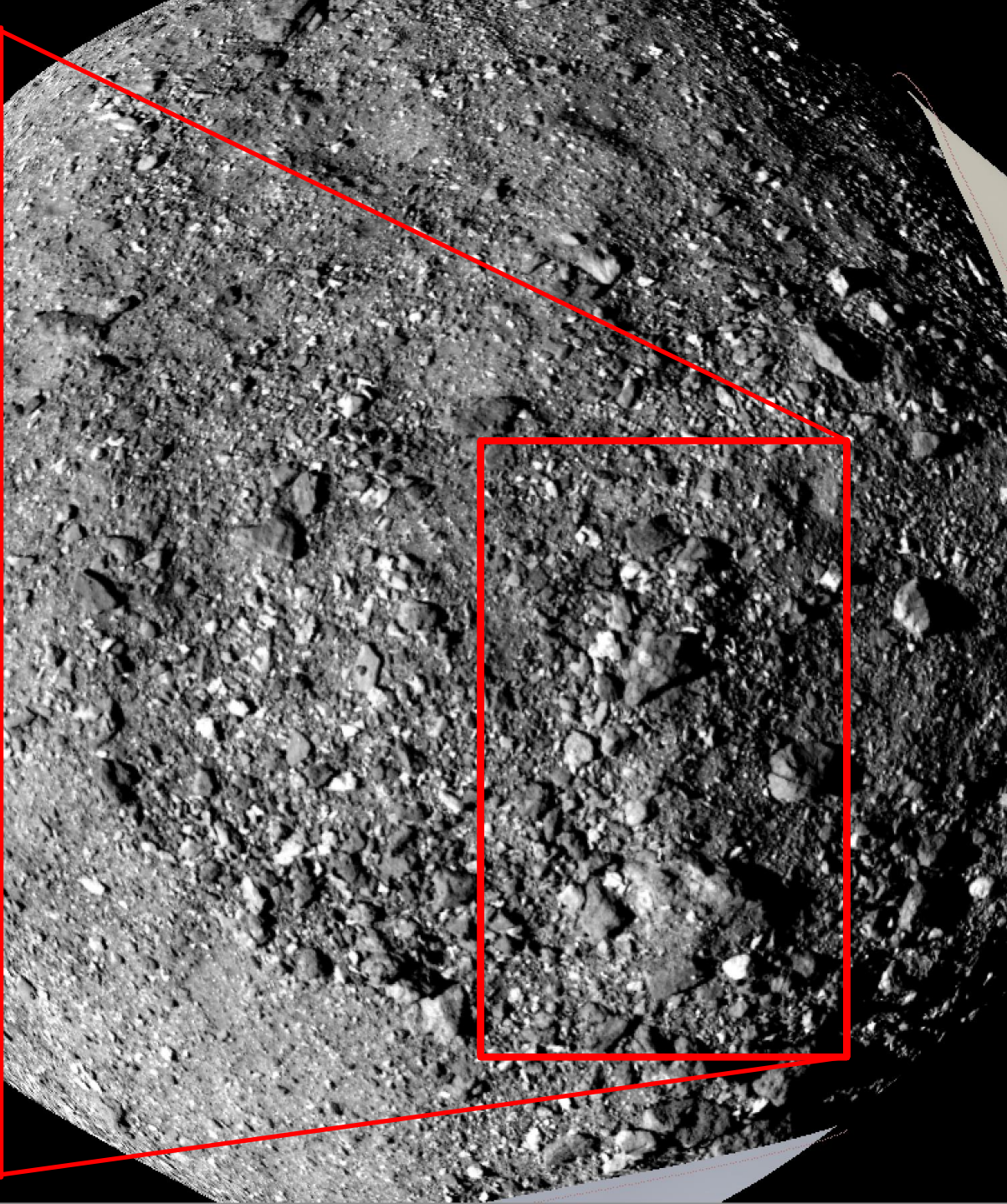
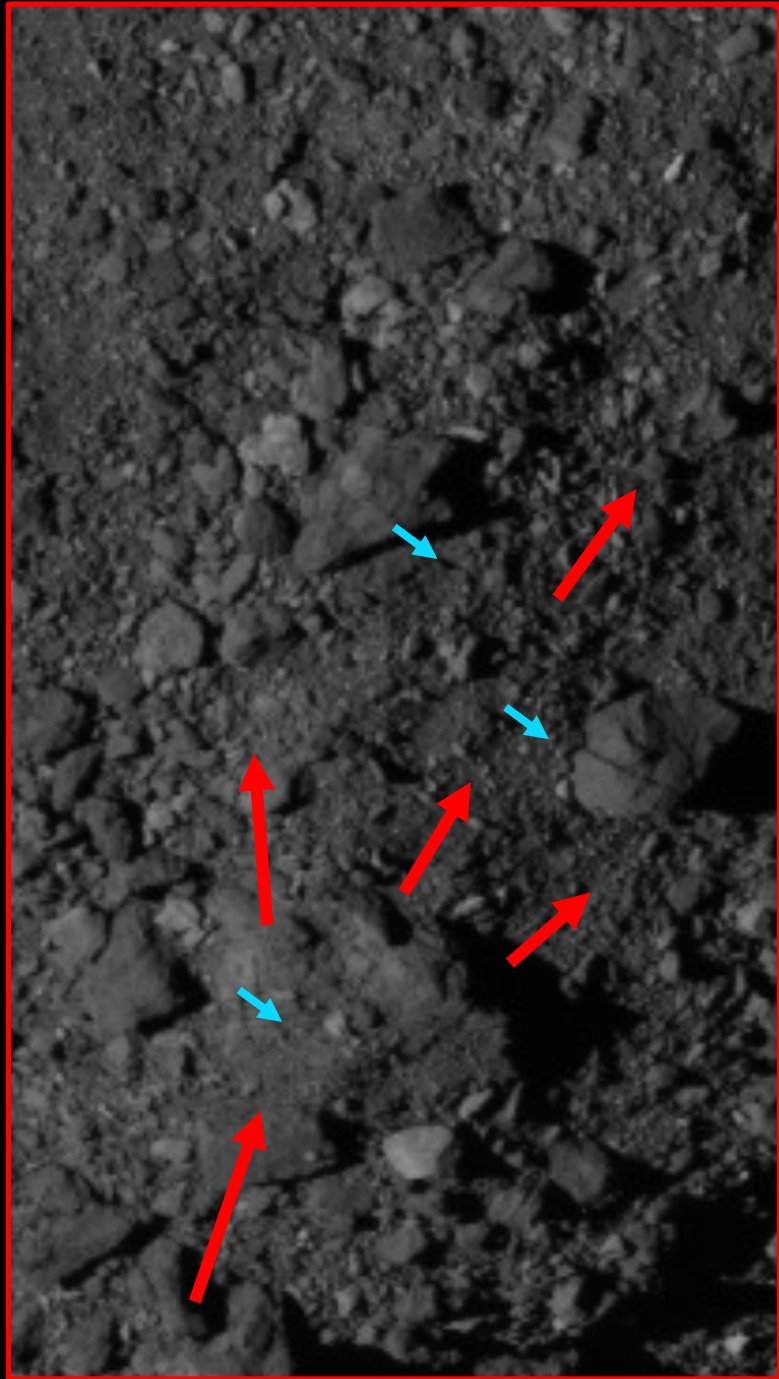


Image taken 12/01  
0.43 m/pixel  
34 deg phase angl



~35m boulder

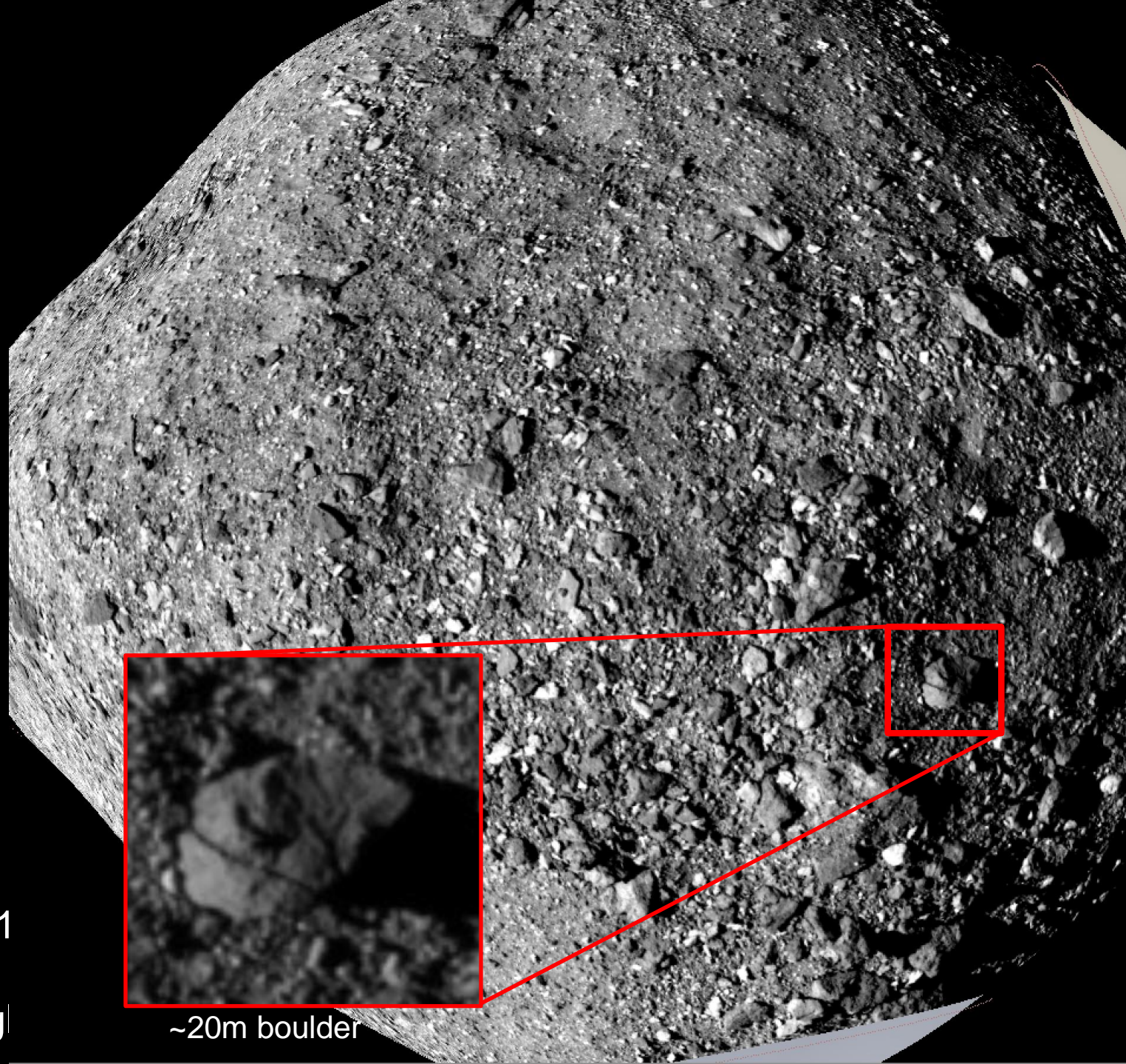


Image taken 12/01  
0.43 m/pixel  
34 deg phase angl

~20m boulder



~21m boulder

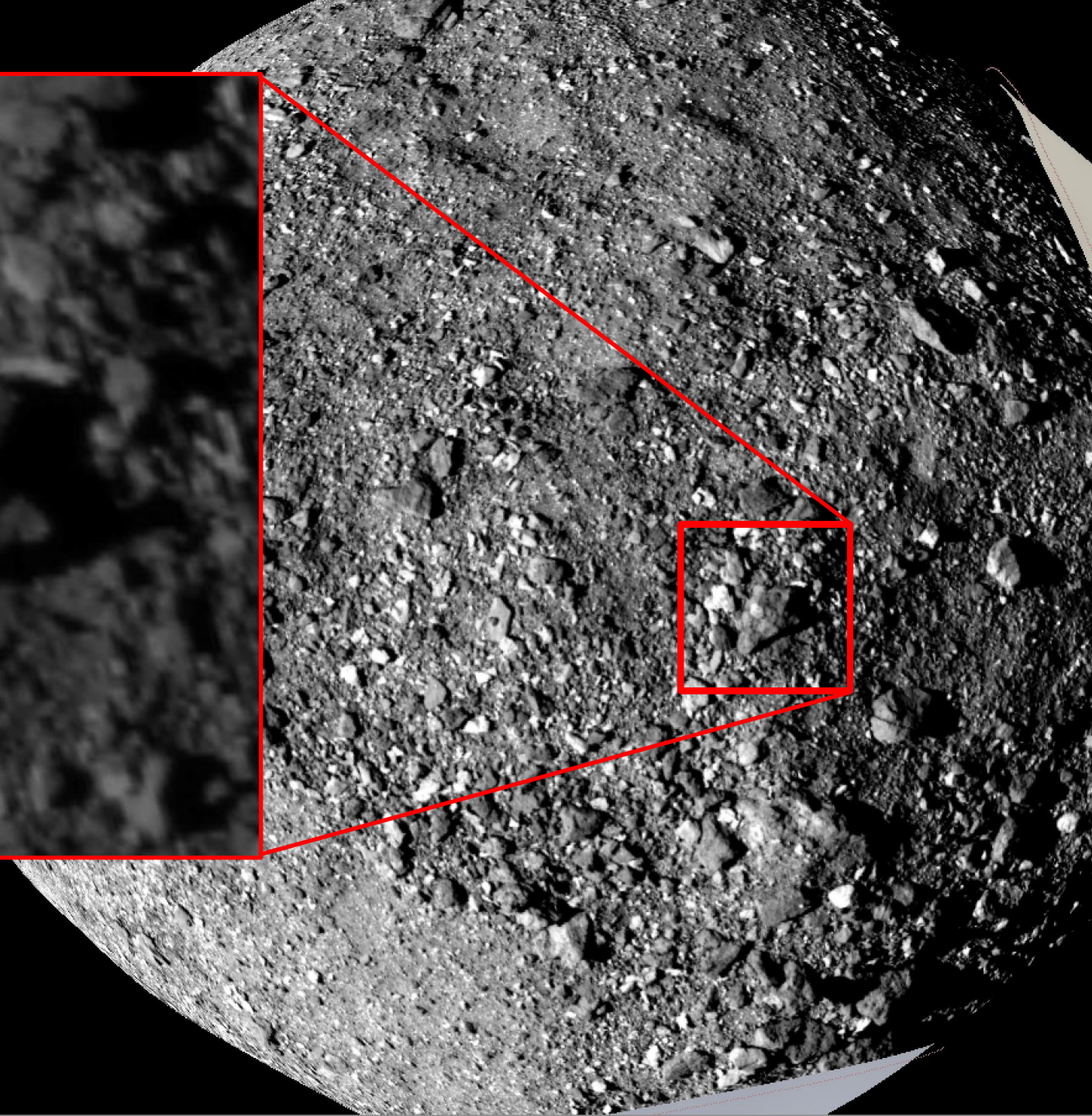
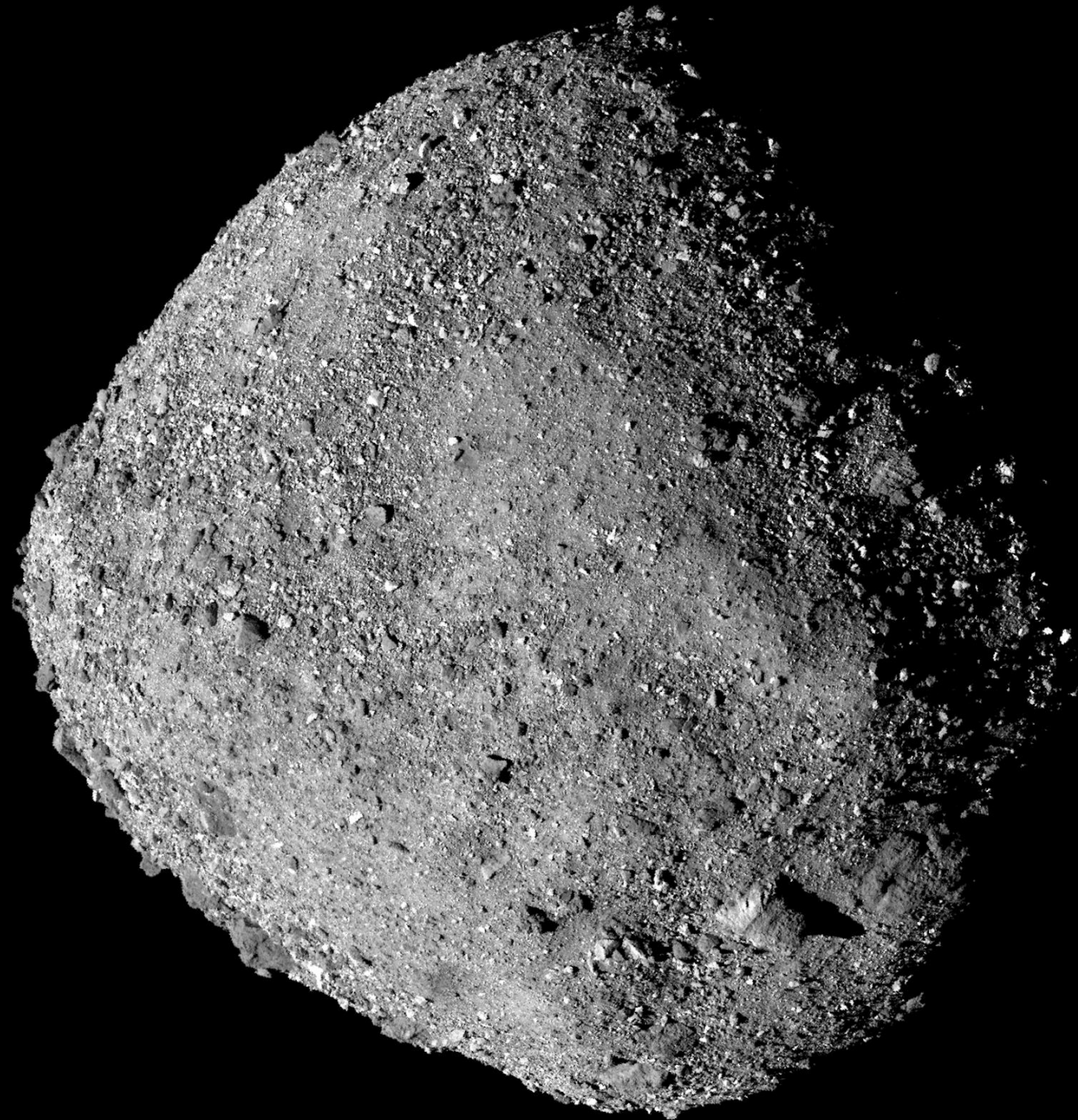
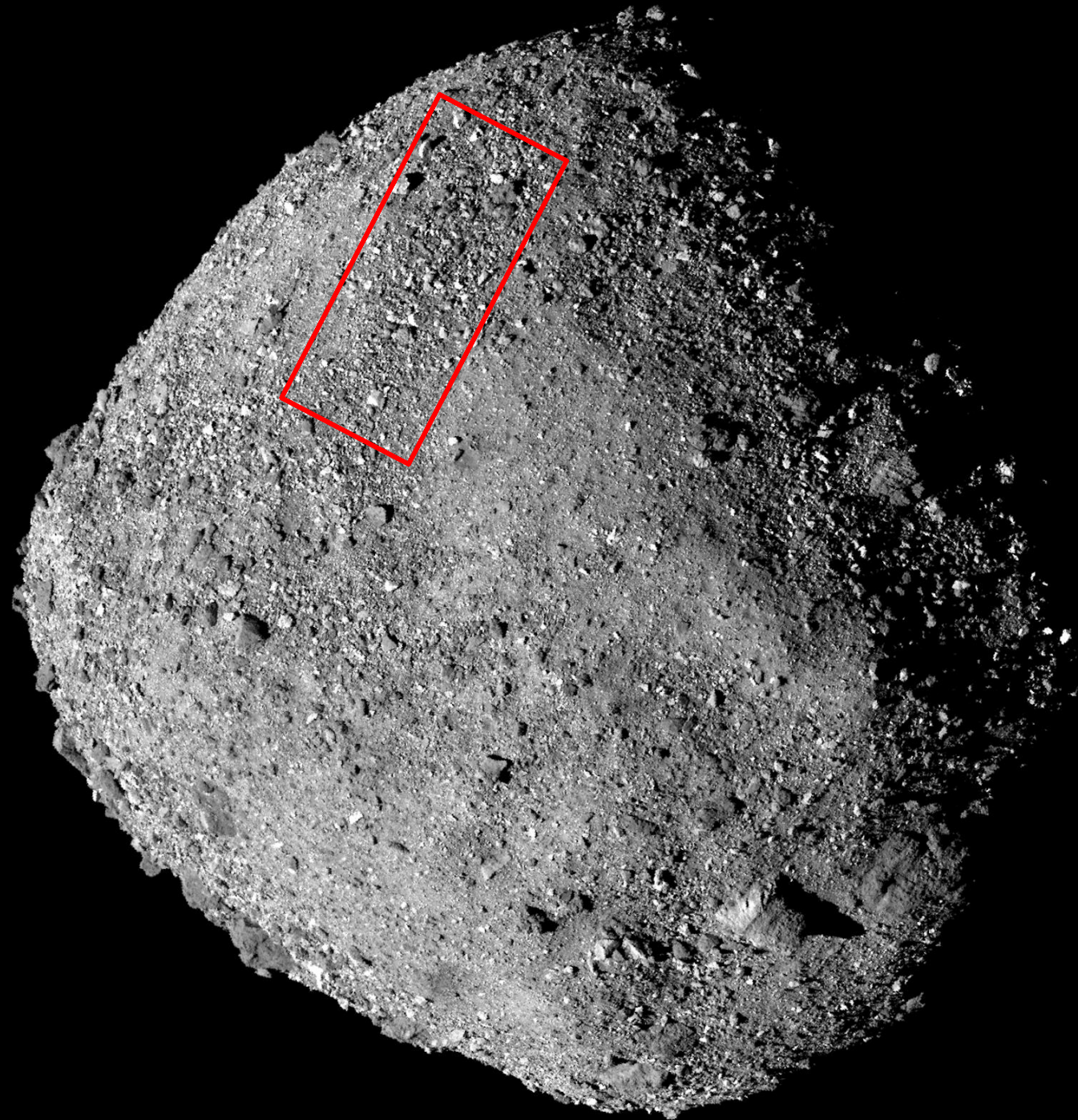


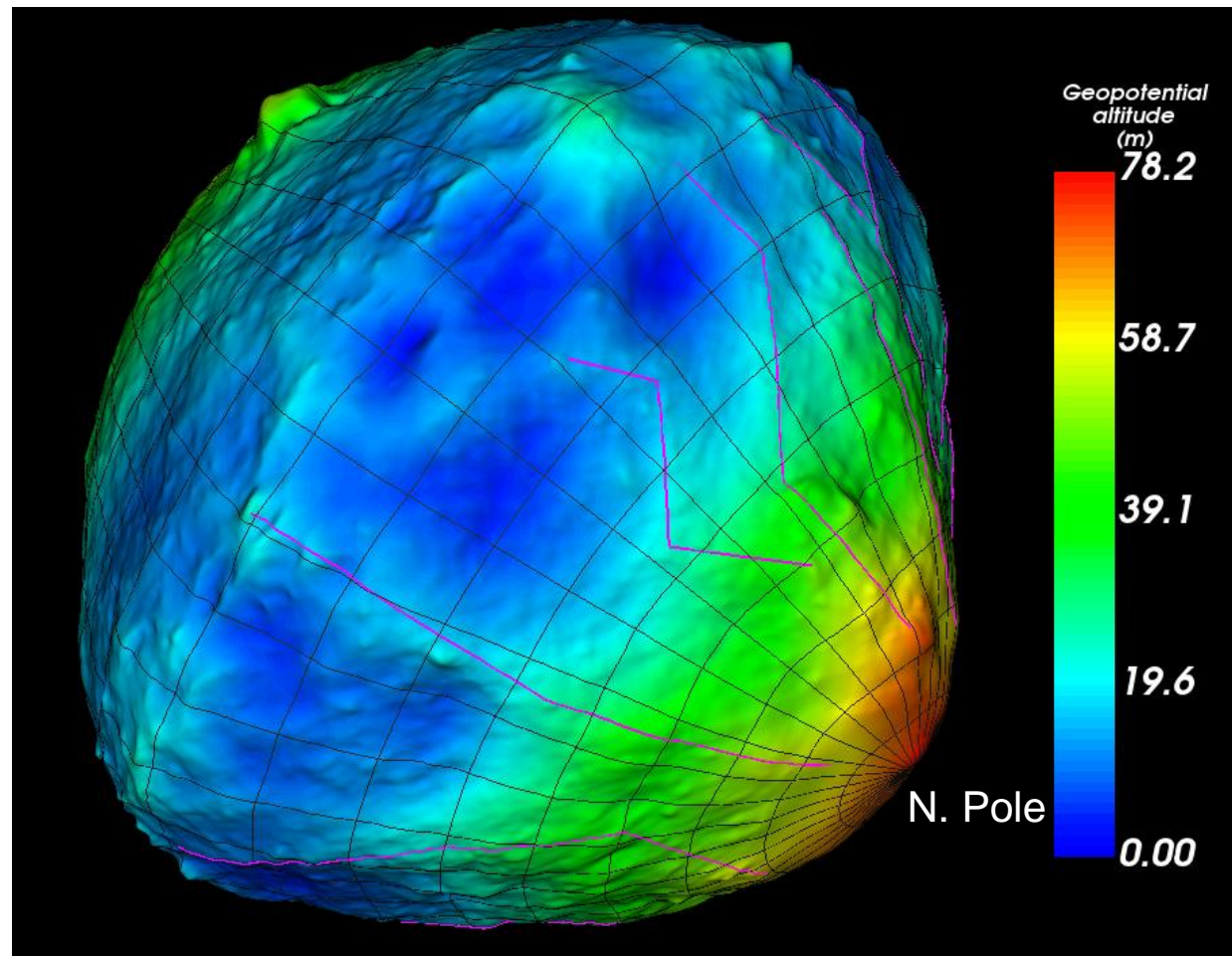
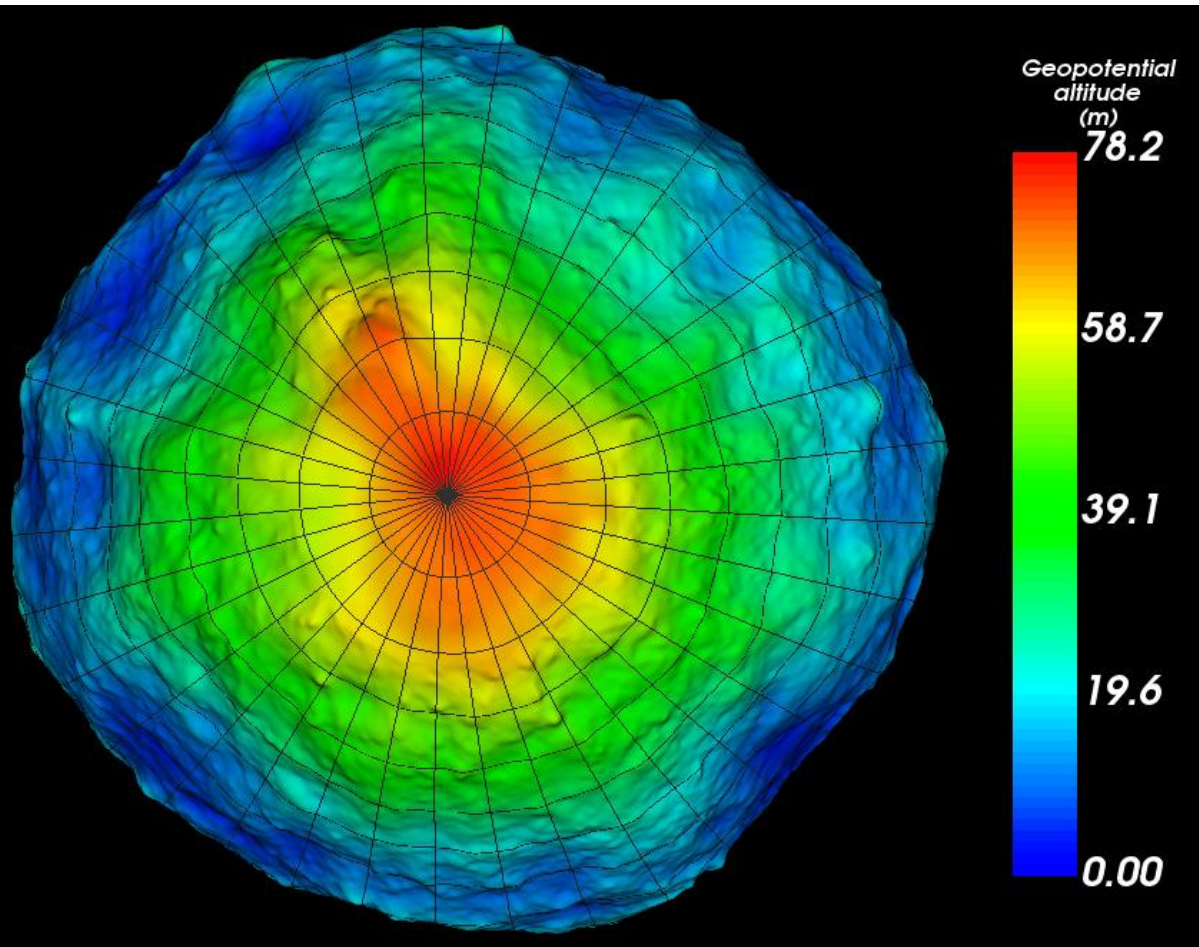
Image taken 12/01  
0.43 m/pixel  
34 deg phase angl







# Linear Features



See talks by Watanabe, Cho, Sakatani ; posters by Sugita,  
Miyamoto, Honda, Morota, Ernst

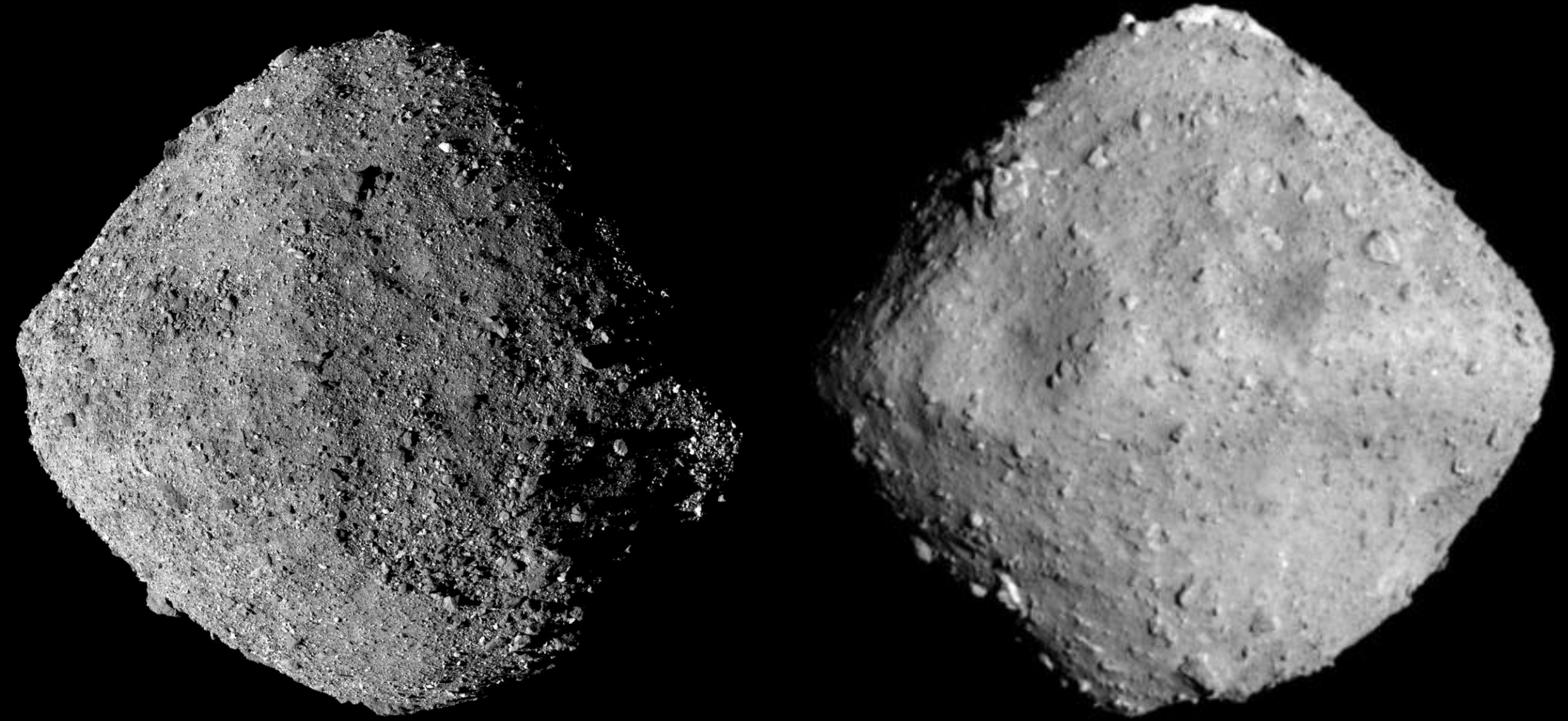


Image credit: ONC team (image credit): JAXA, University of Tokyo,  
Kochi University, Rikkyo University, Nagoya University, Chiba  
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