

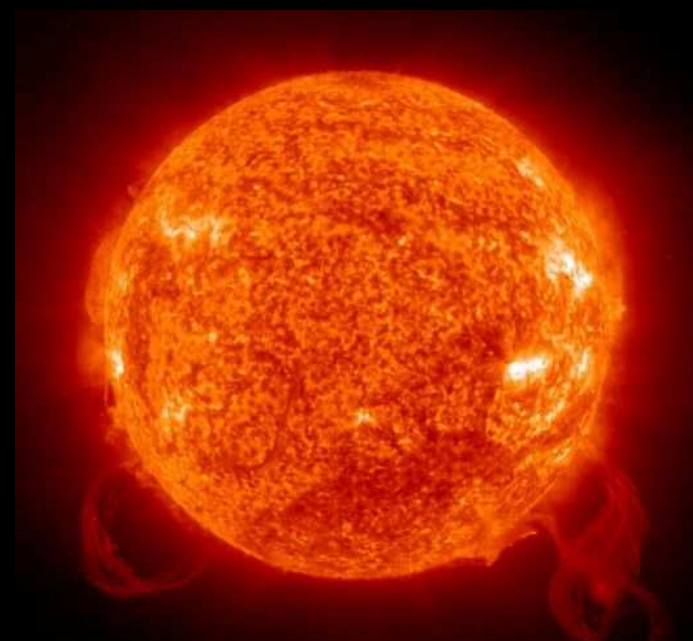
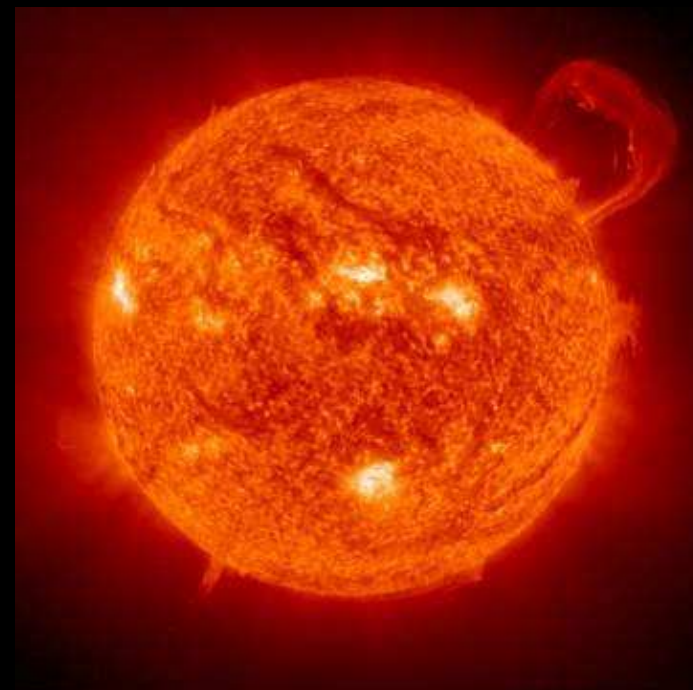
KOSMOS – stereo i w kolorze...



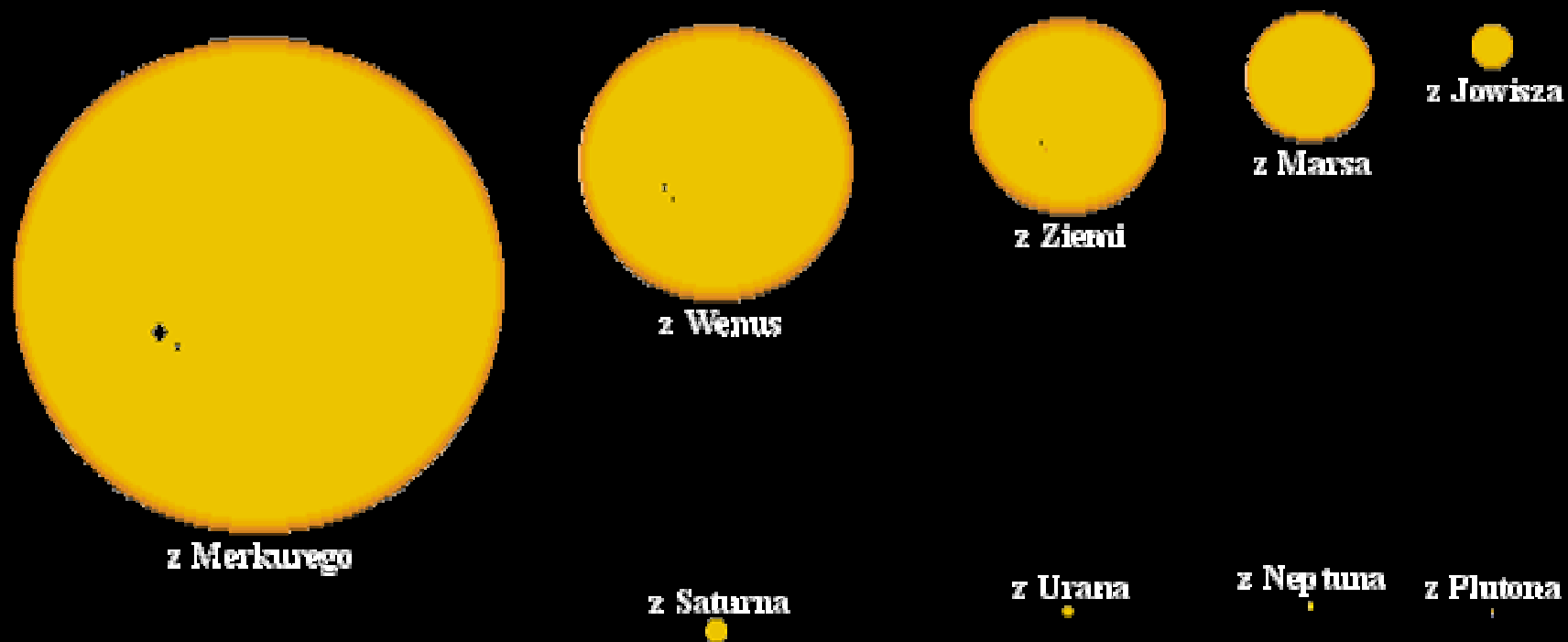
dr Krzysztof Rochowicz
Zakład Dydaktyki Fizyki UMK Toruń

Plan pokazu

- Słońce: krótki opis (ilustrowany)
- Sondy STEREO: charakterystyka i wybrane zdjęcia
- Trójwymiarowe zdjęcia Kosmosu

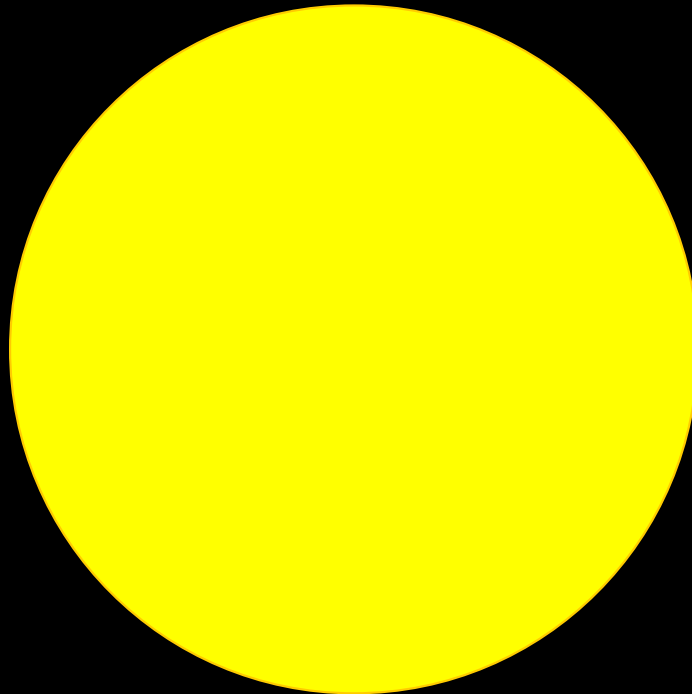


Jak duże jest Słońce na niebie?



Jak duże jest Słońce naprawdę?

Rozmiary orbity Księżyca:



Słońce



Jowisz

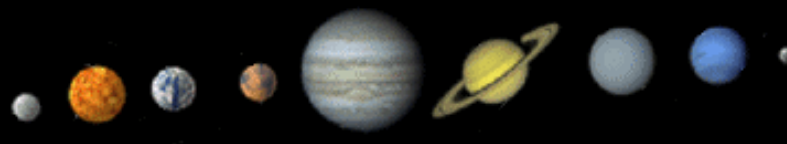


Syriusz B

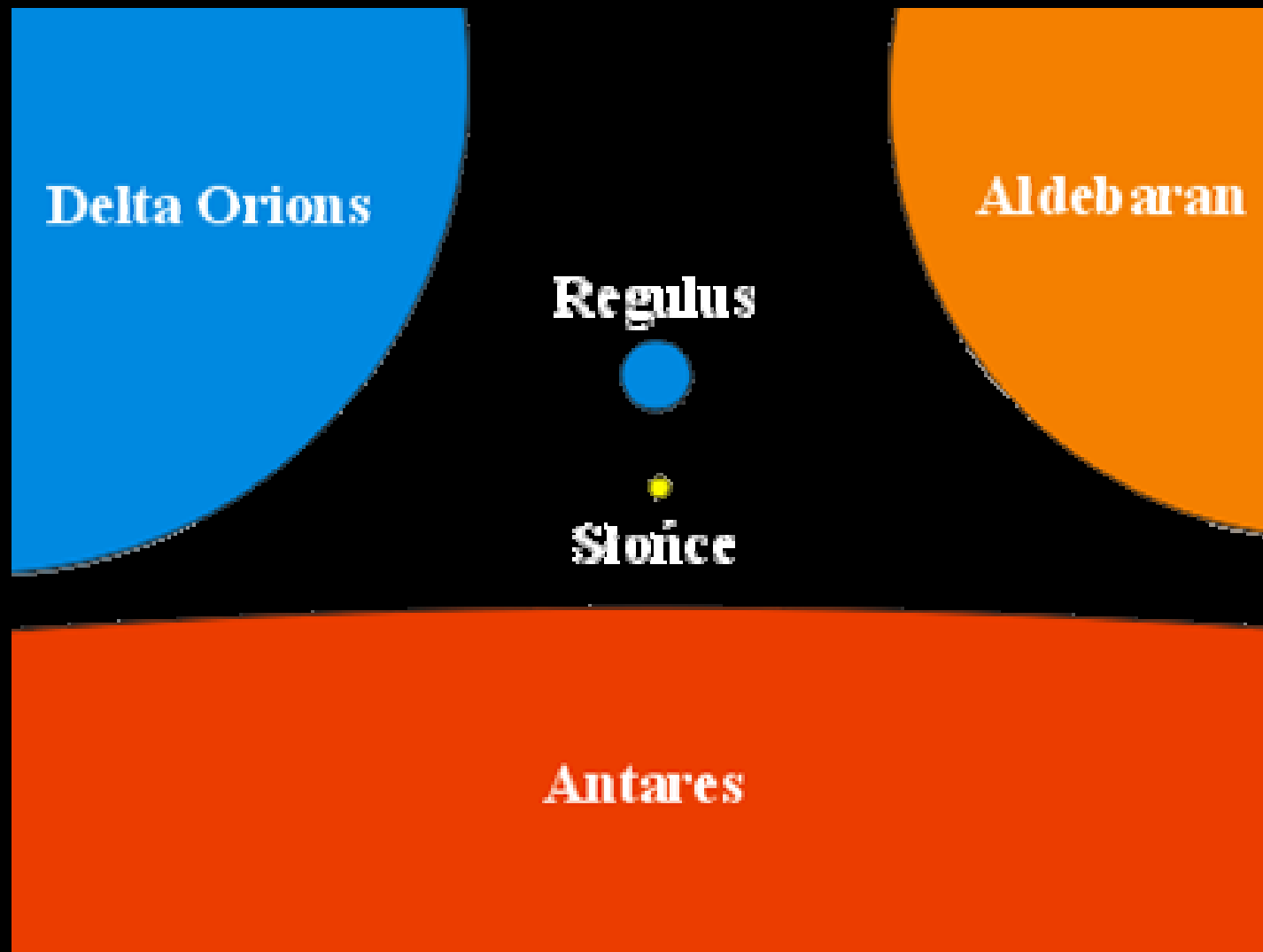


Ziemia

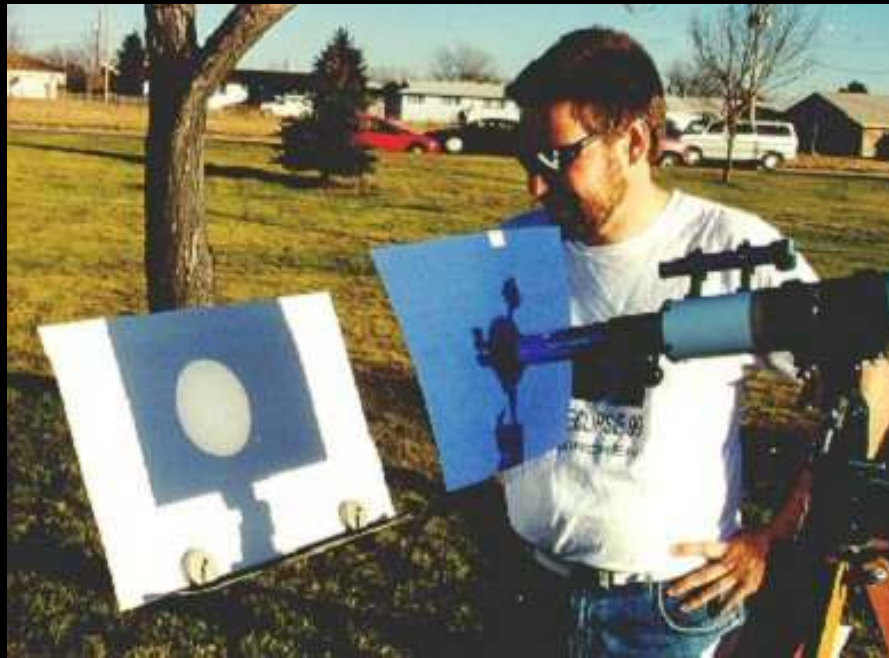
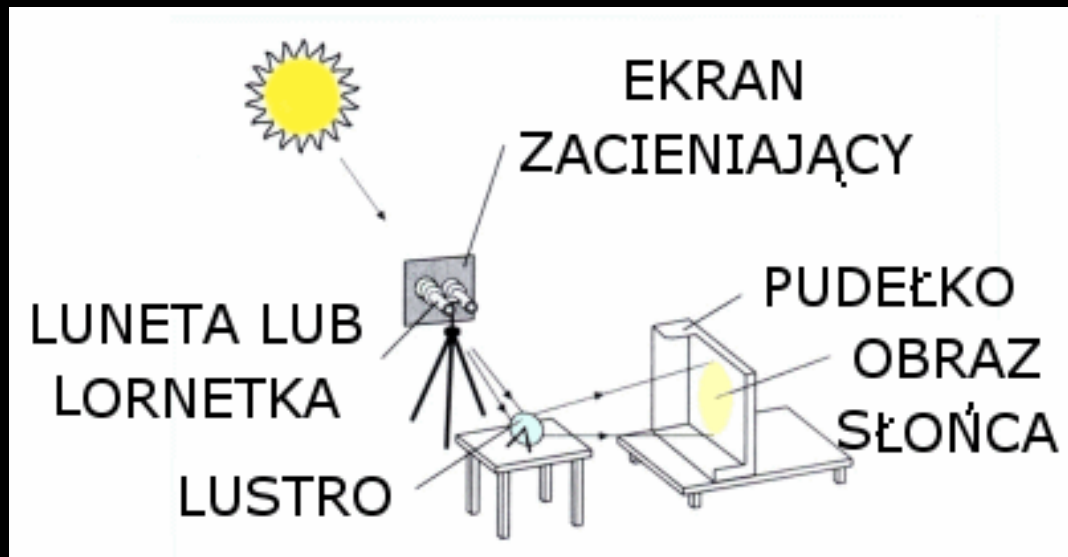
Jak masywne jest Słońce?

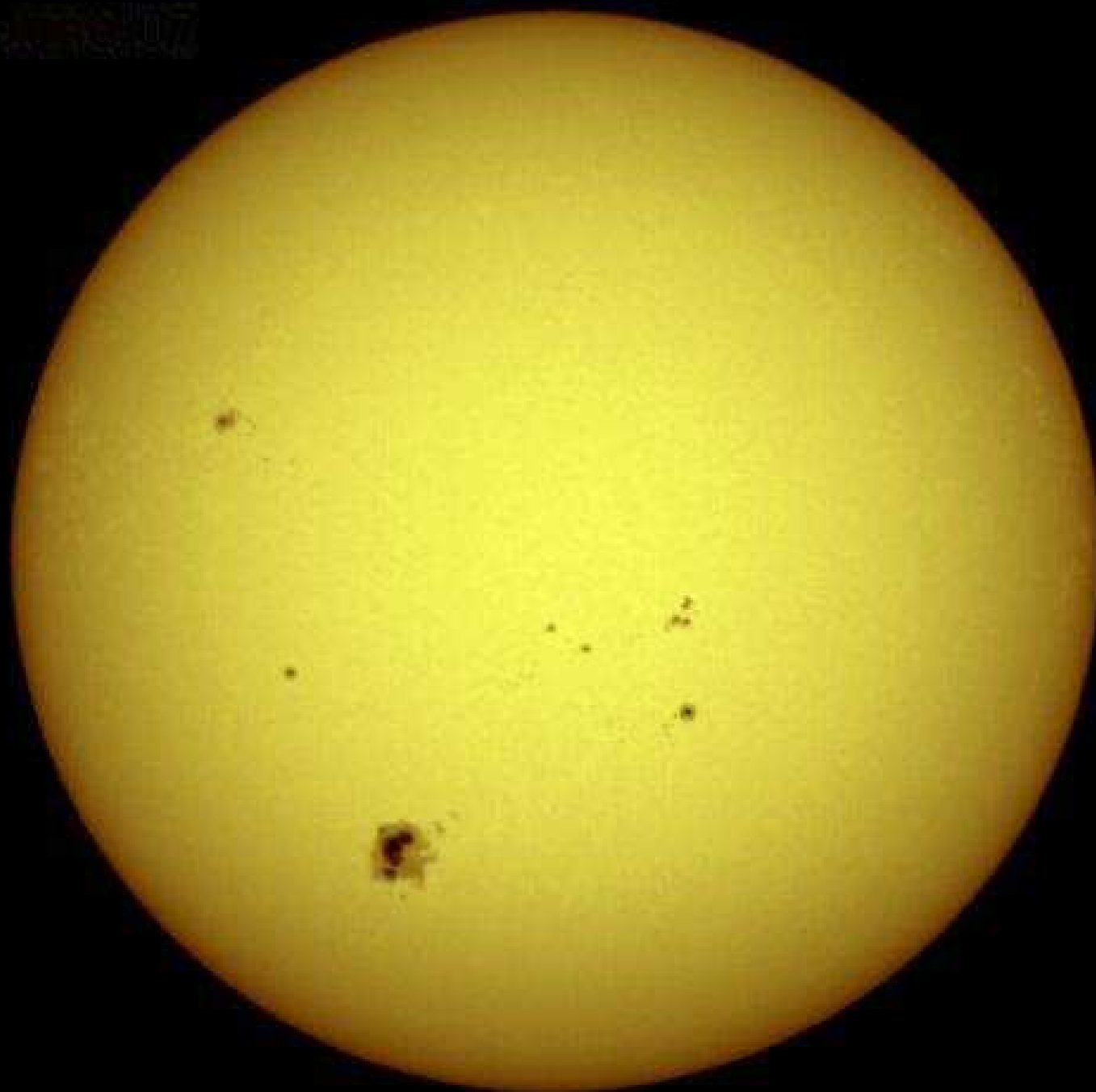

$$= 999 * ($$

$$)$$

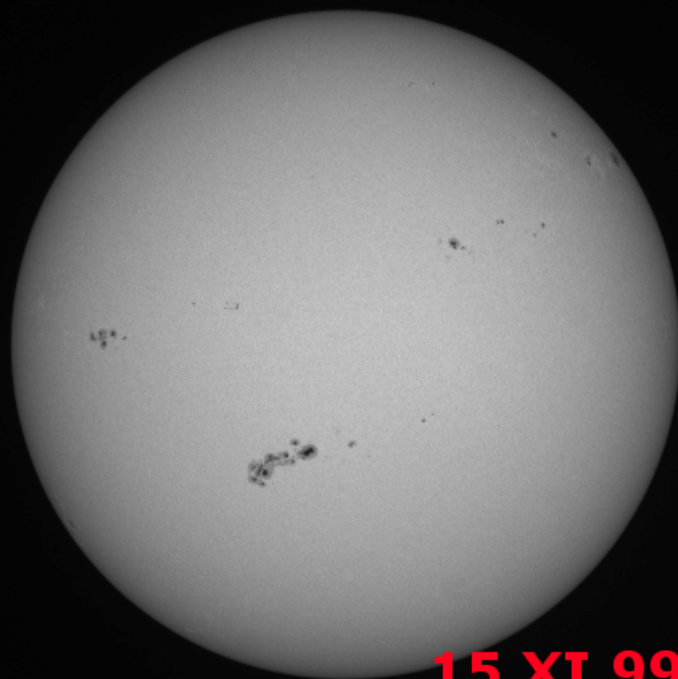
Czy Słońce jest naprawdę duże?



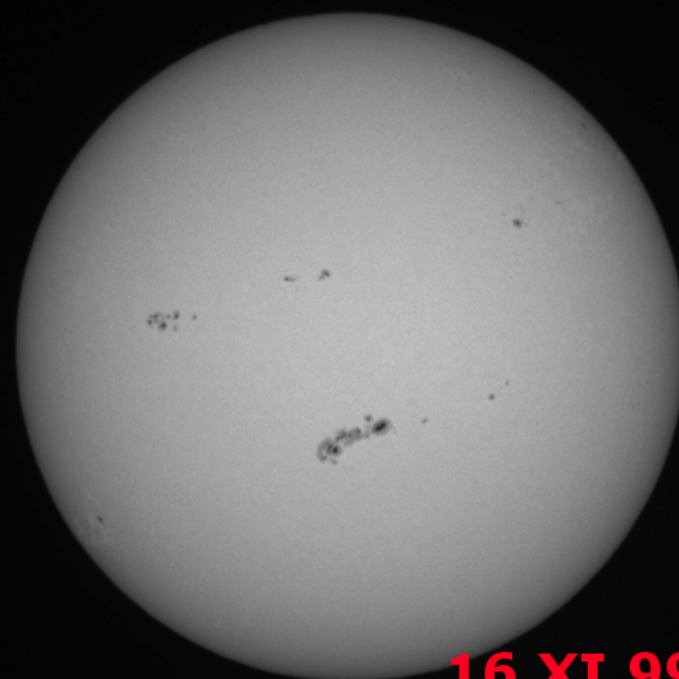
Jak obserwować Słońce?



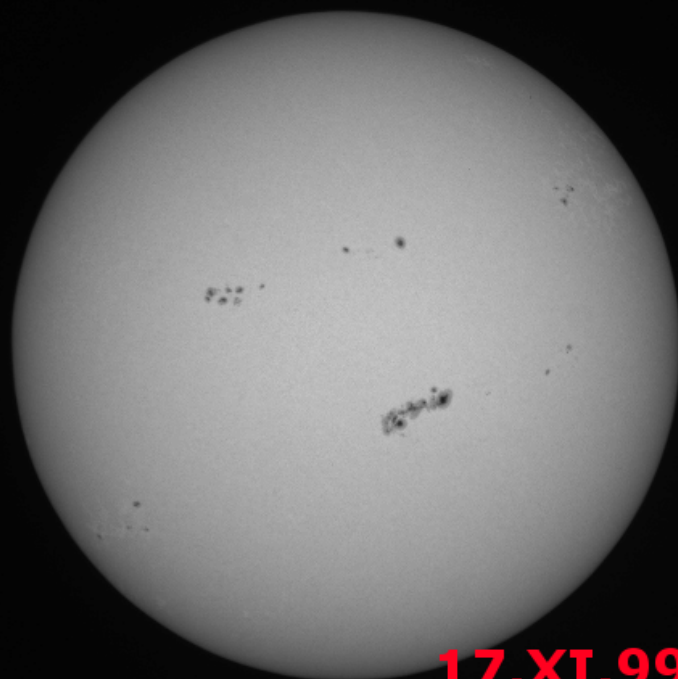




15.XI.99



16.XI.99

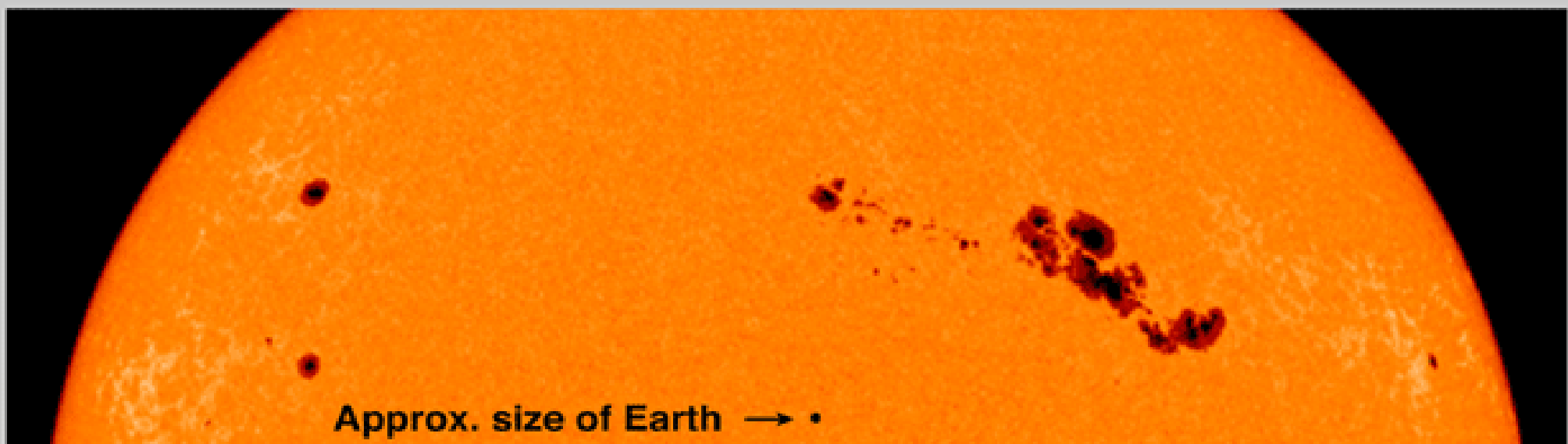
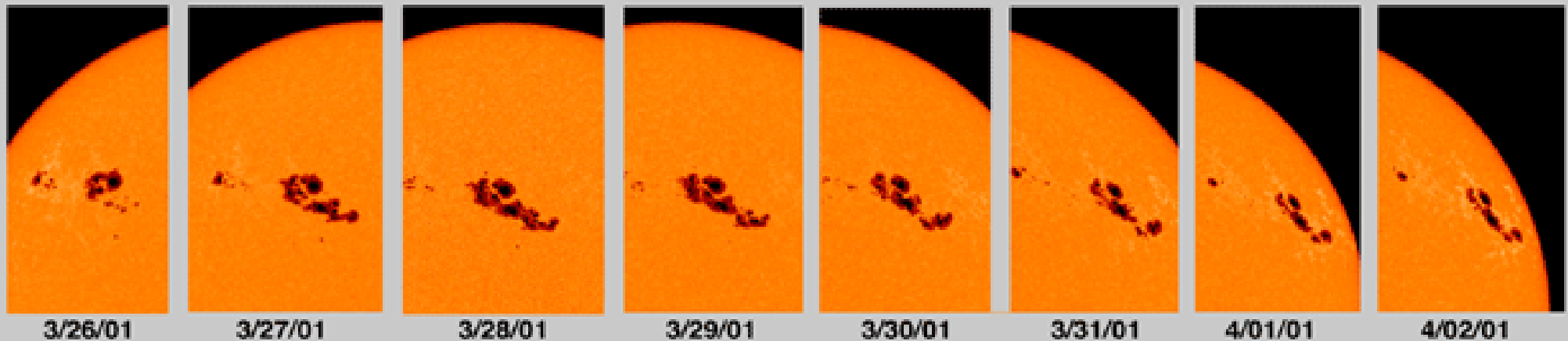


17.XI.99



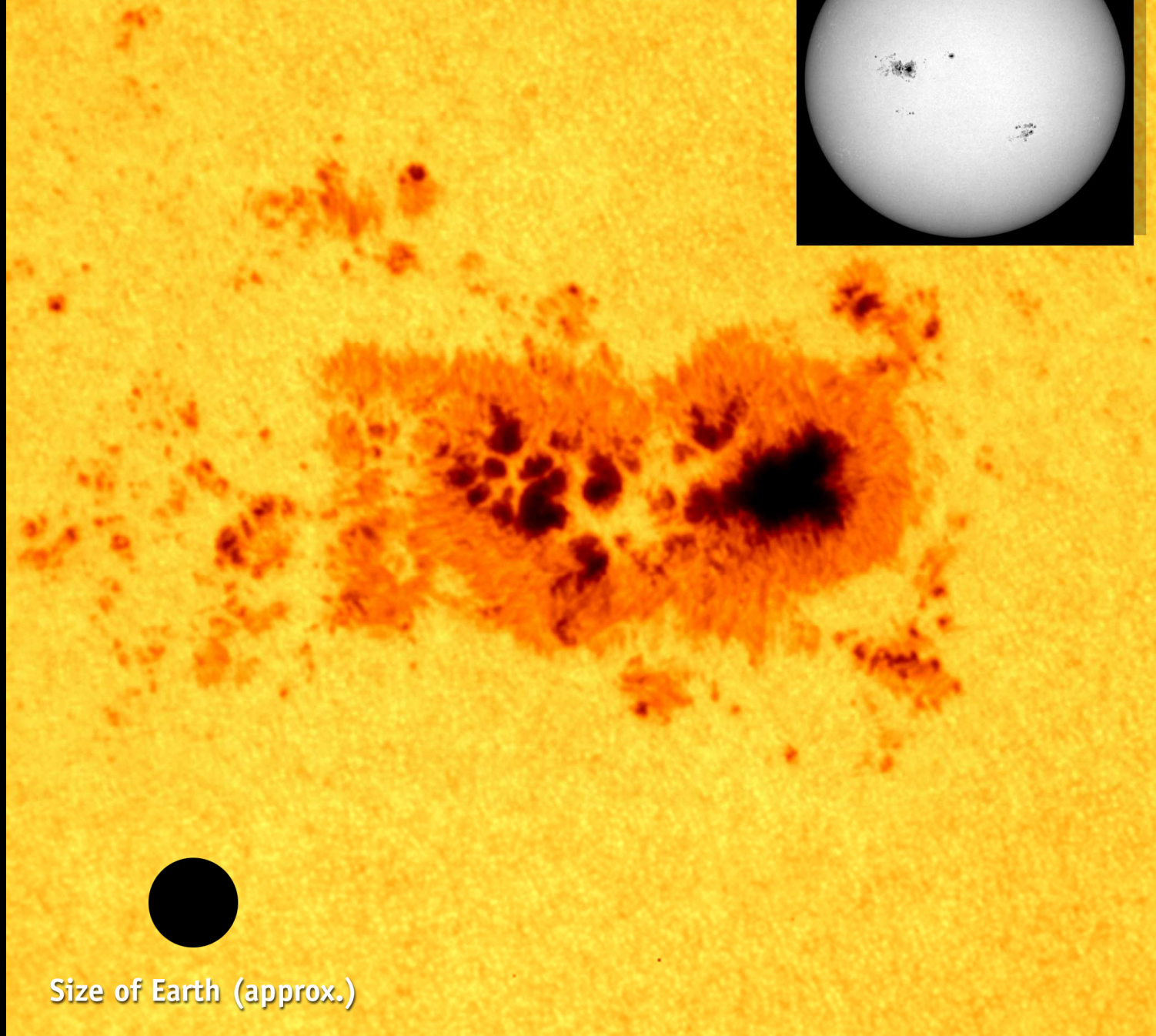
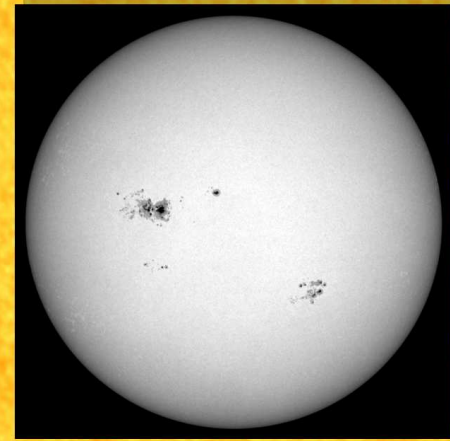
18.XI.99

Przesuwanie się plam – rotacja Słońca

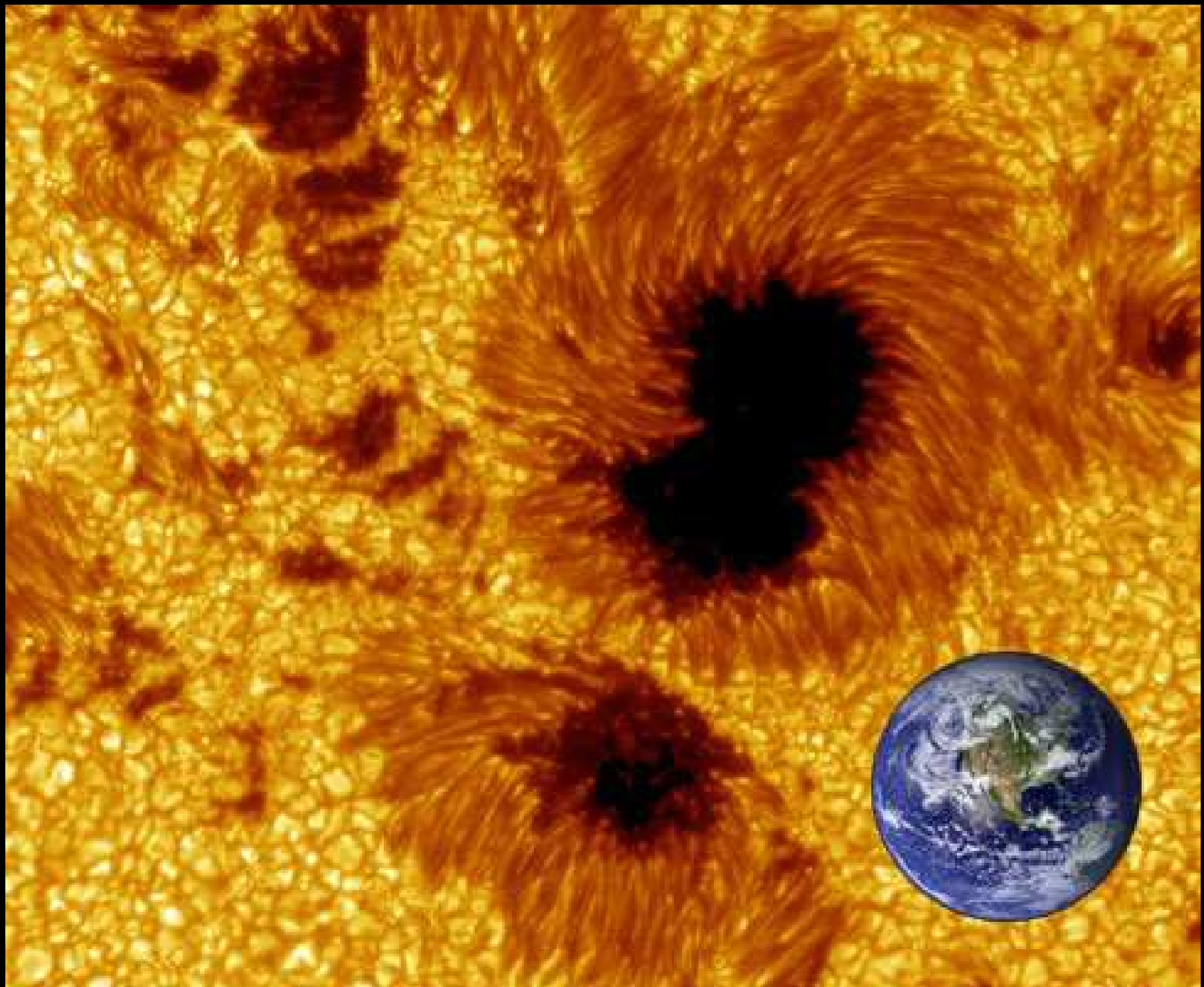


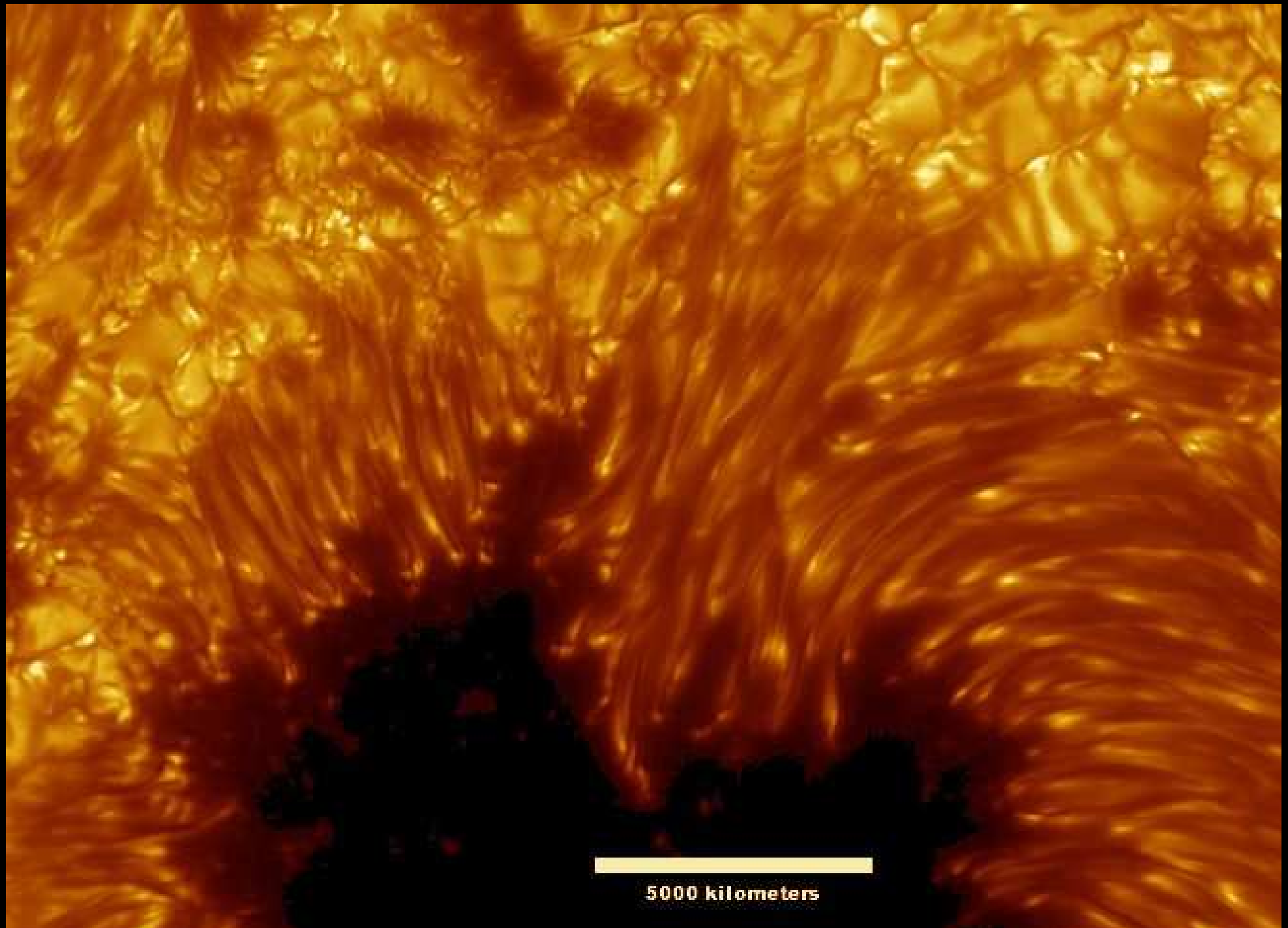
March 30, 2001

September 23, 2000

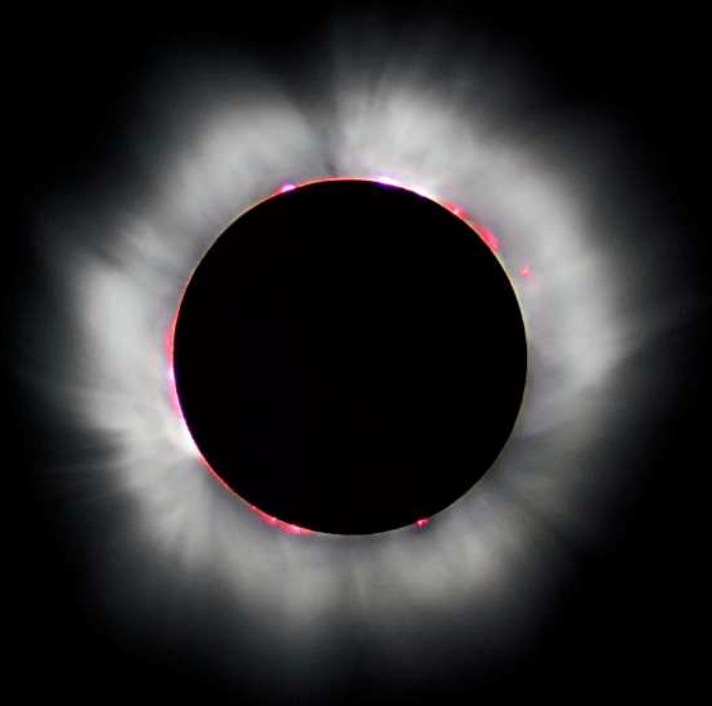


Size of Earth (approx.)





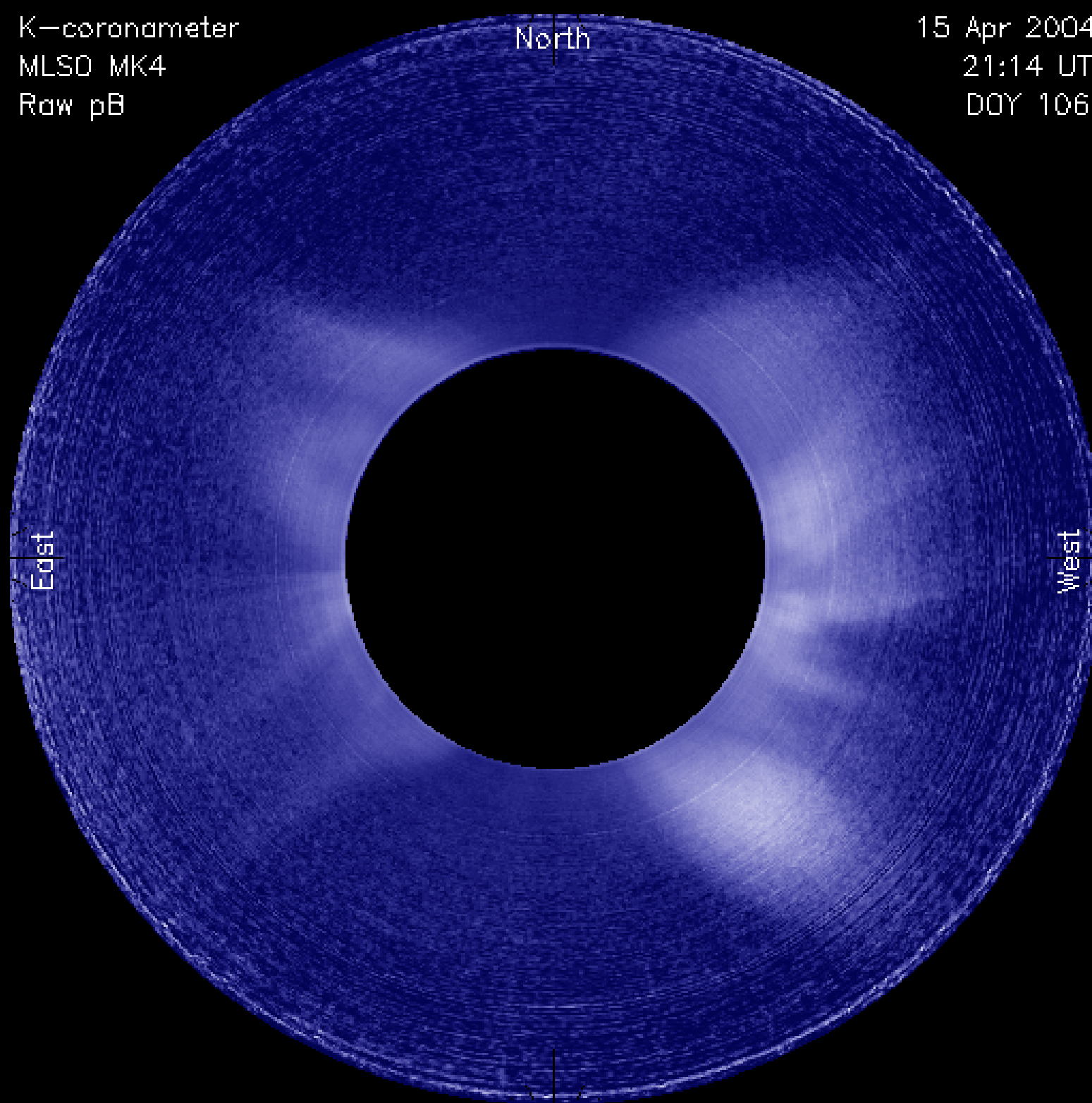
Całkowite zaćmienie Słońca

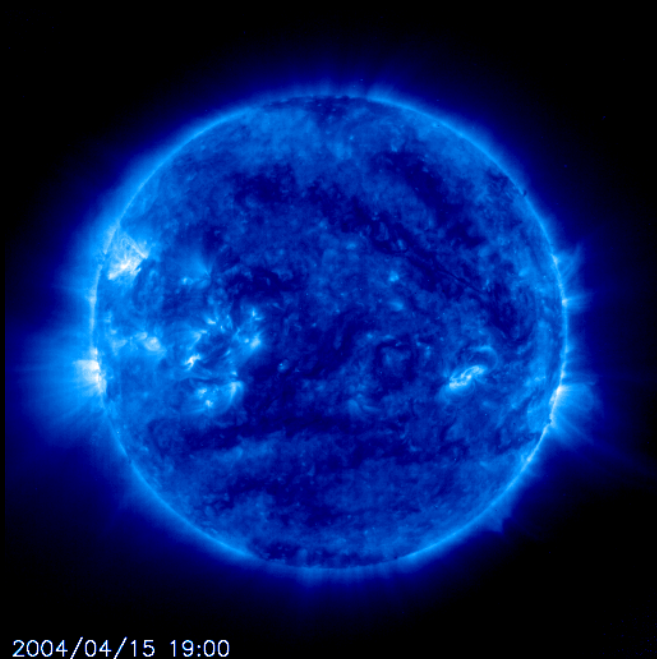


K-coronameter
MLSD MK4
Raw pB

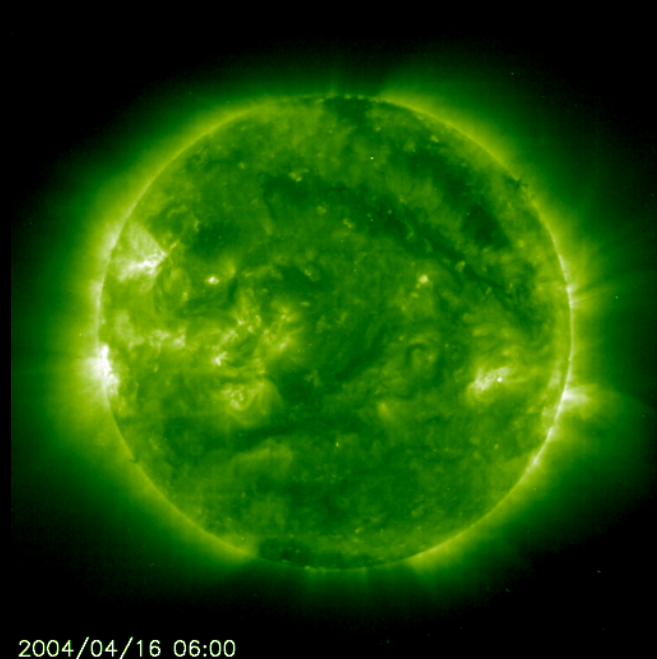
North

15 Apr 2004
21:14 UT
DOY 106

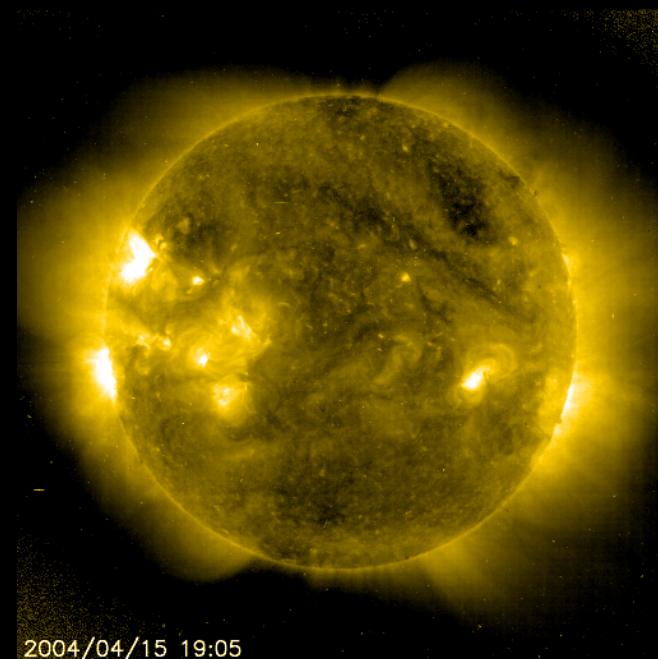




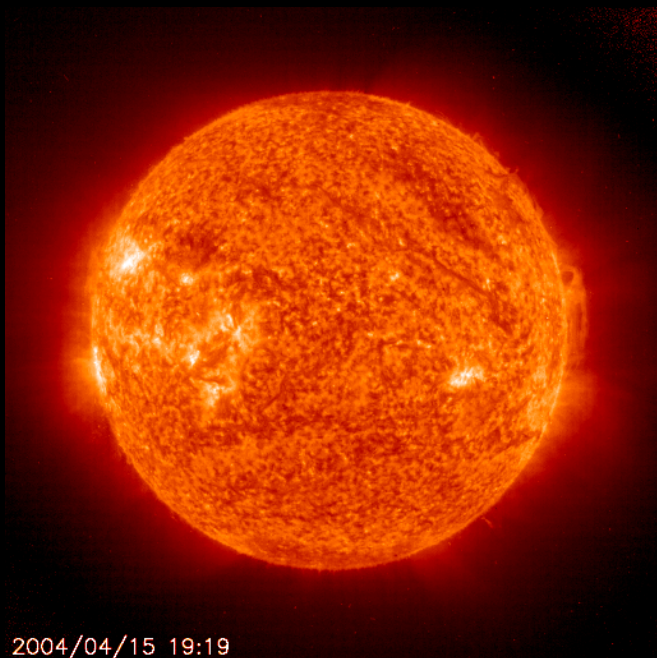
2004/04/15 19:00



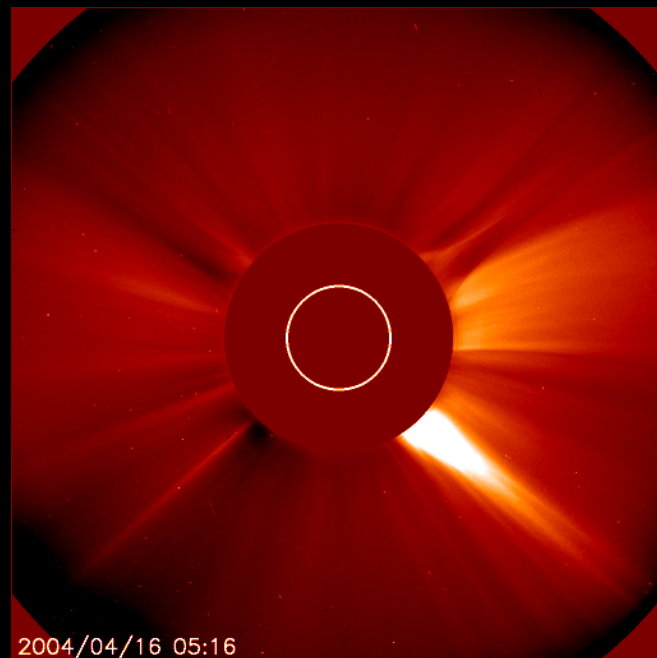
2004/04/16 06:00



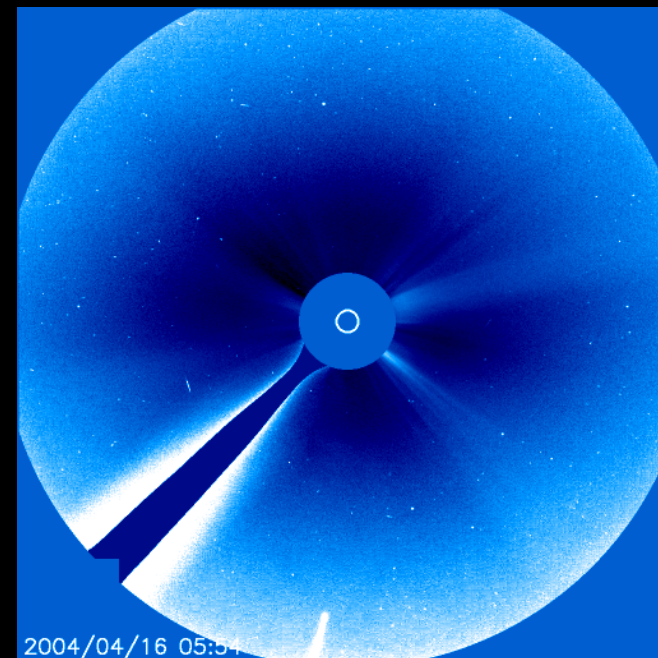
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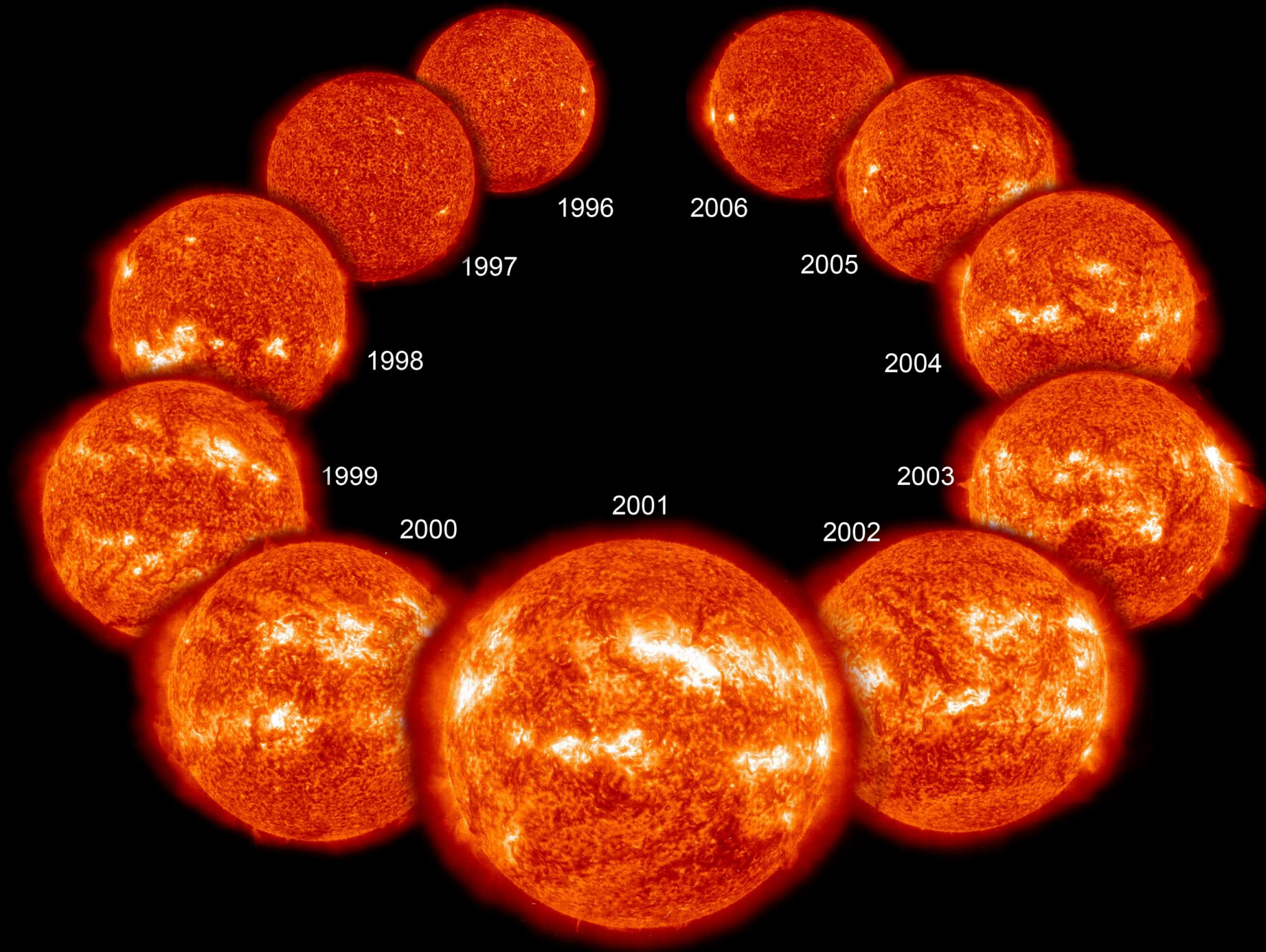
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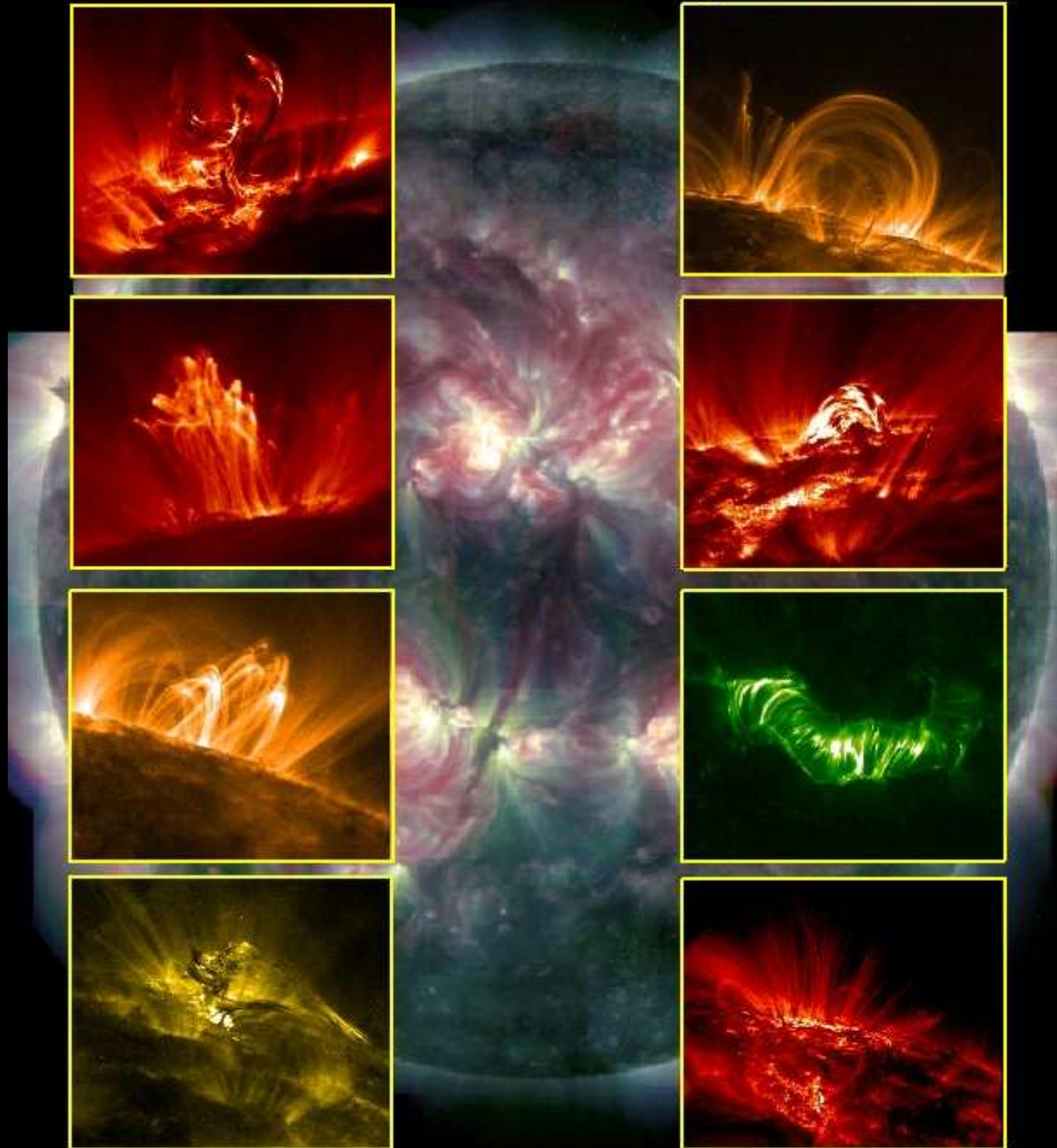
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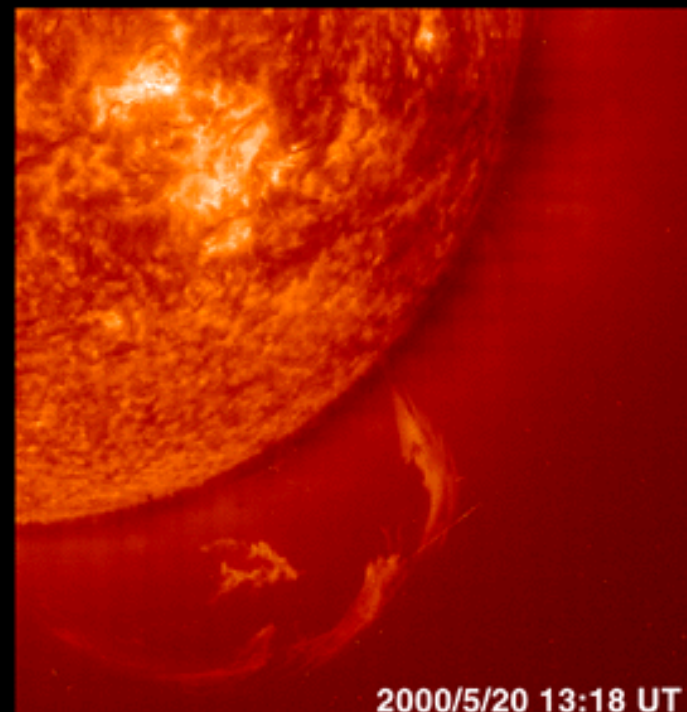
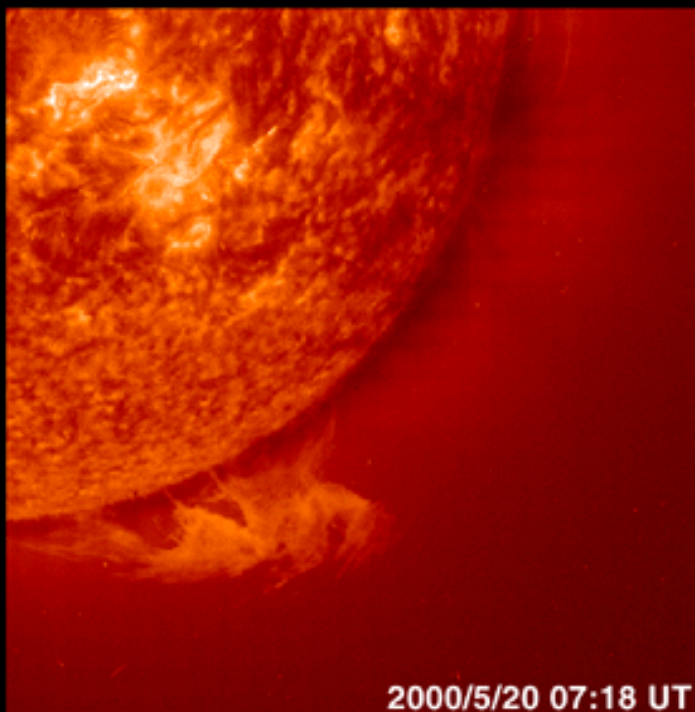
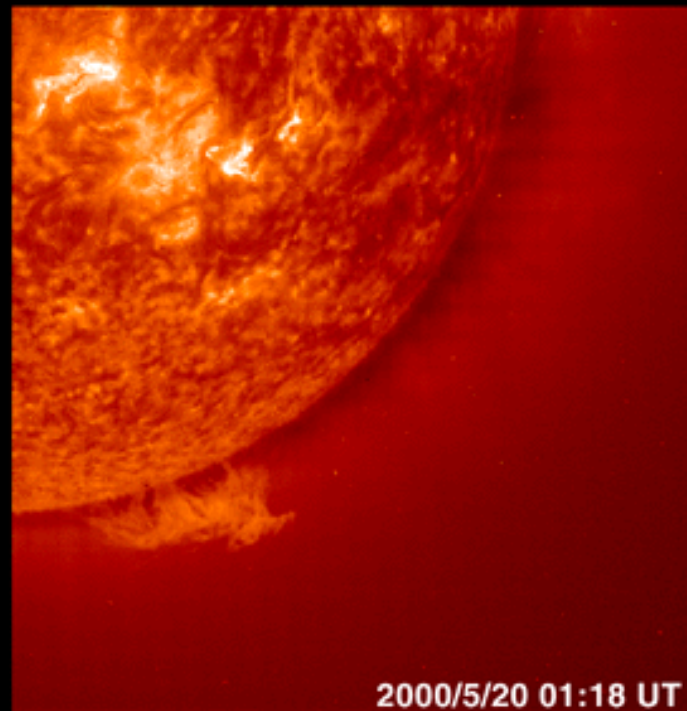
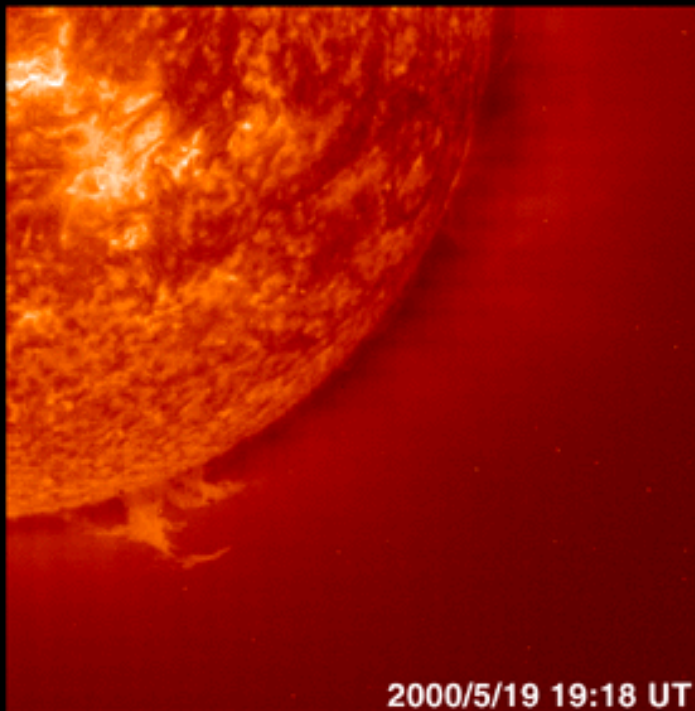
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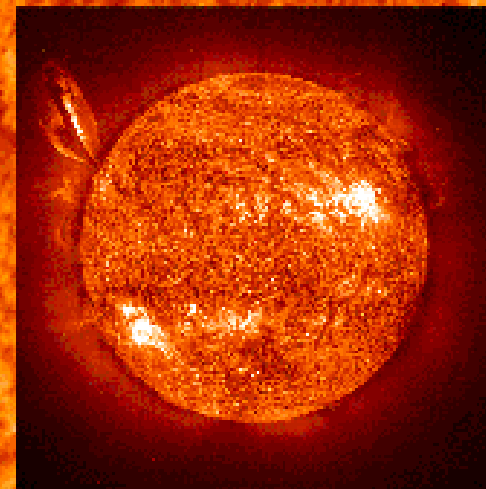
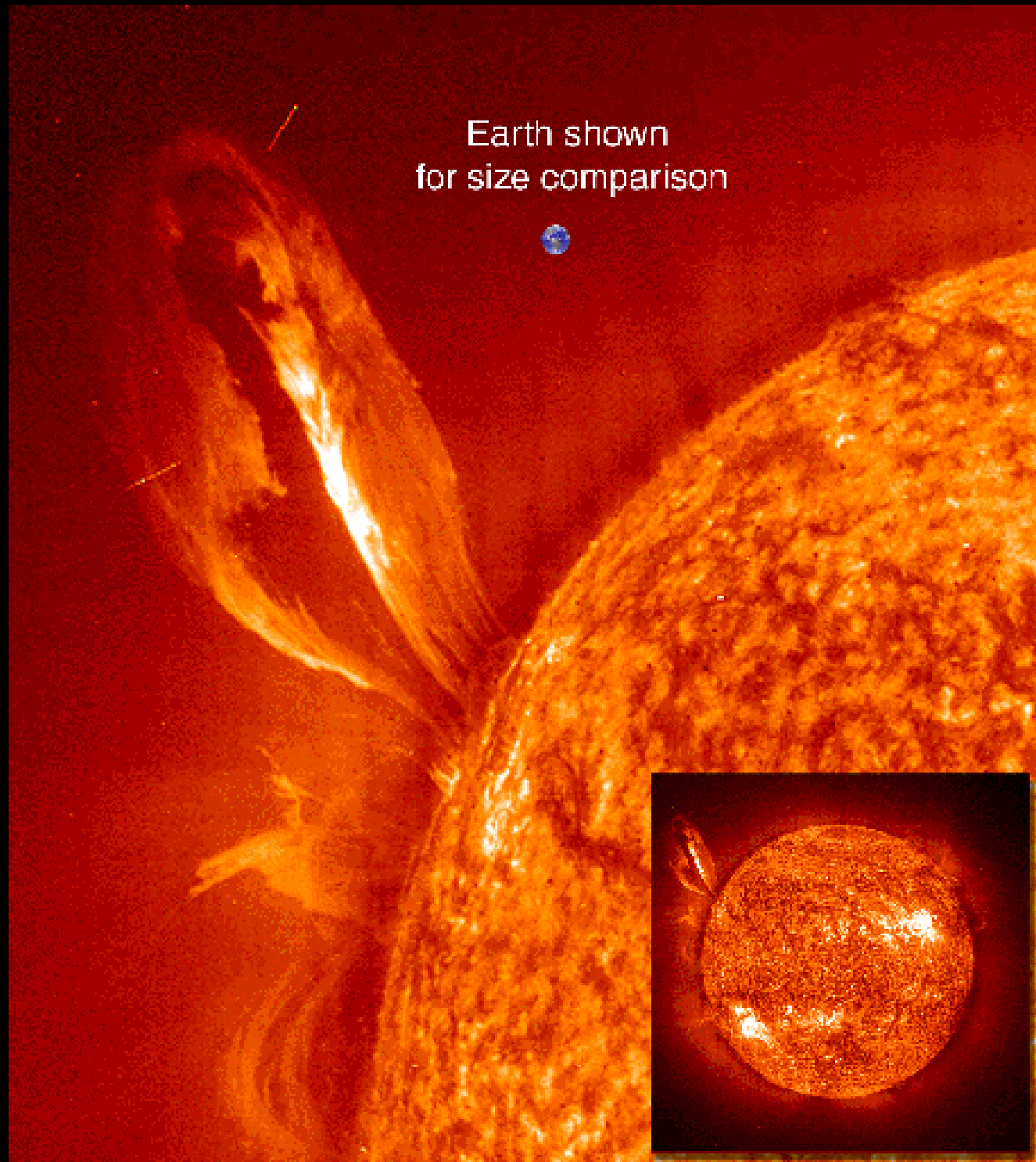
TRACE A new view of the Sun

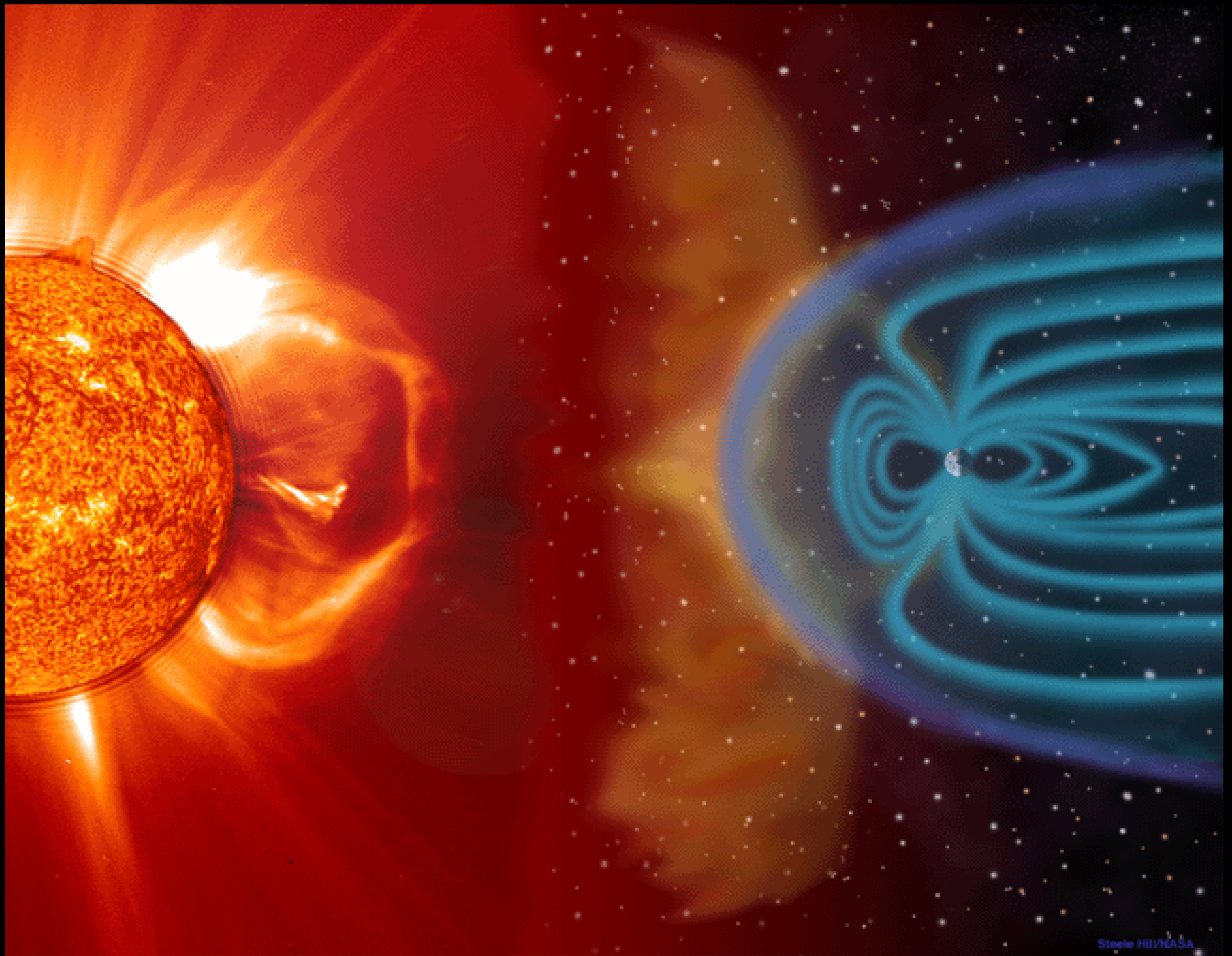


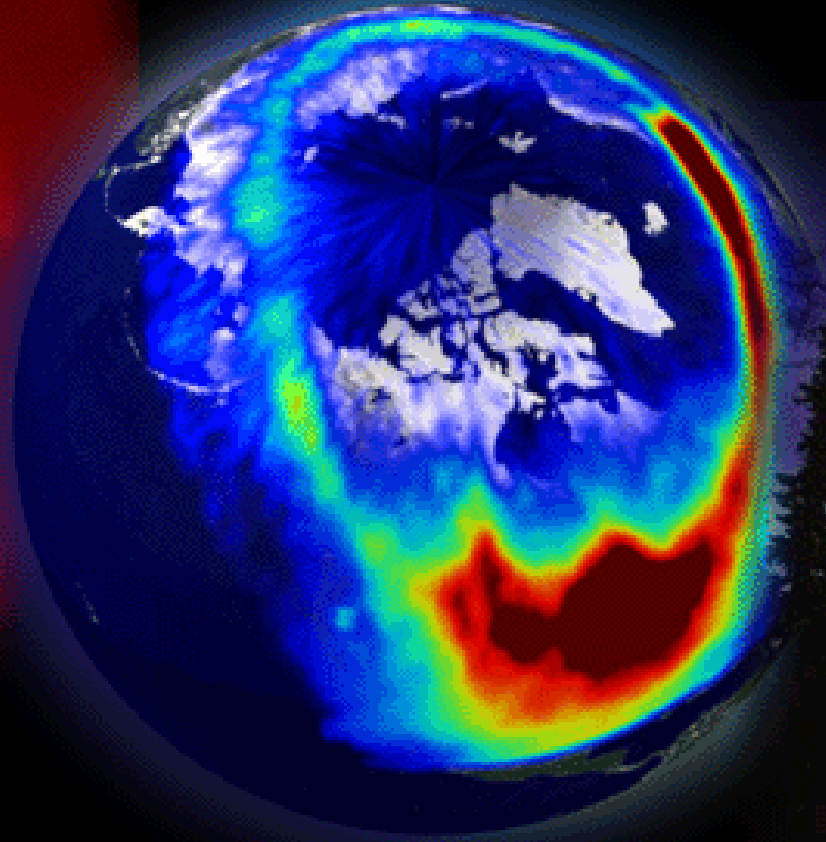
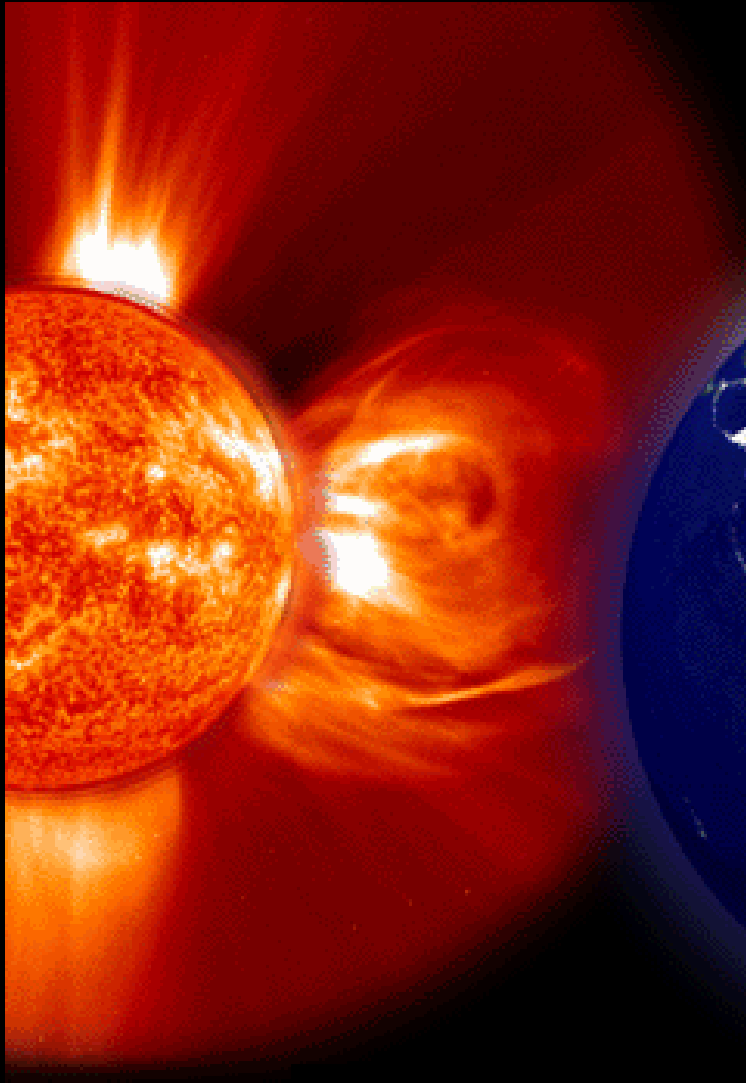
<http://vestige.lmsal.com/TRACE>



Earth shown
for size comparison





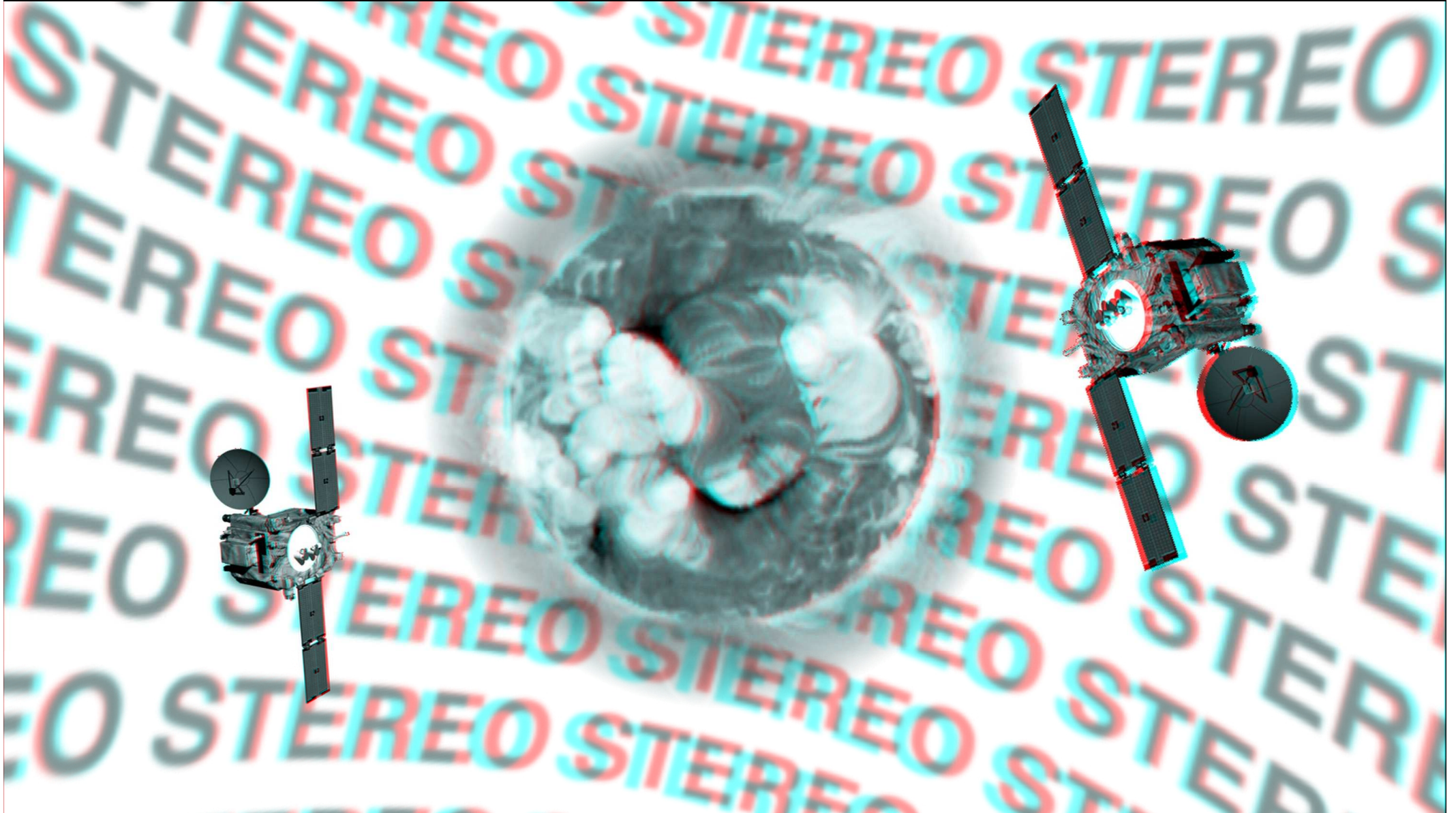


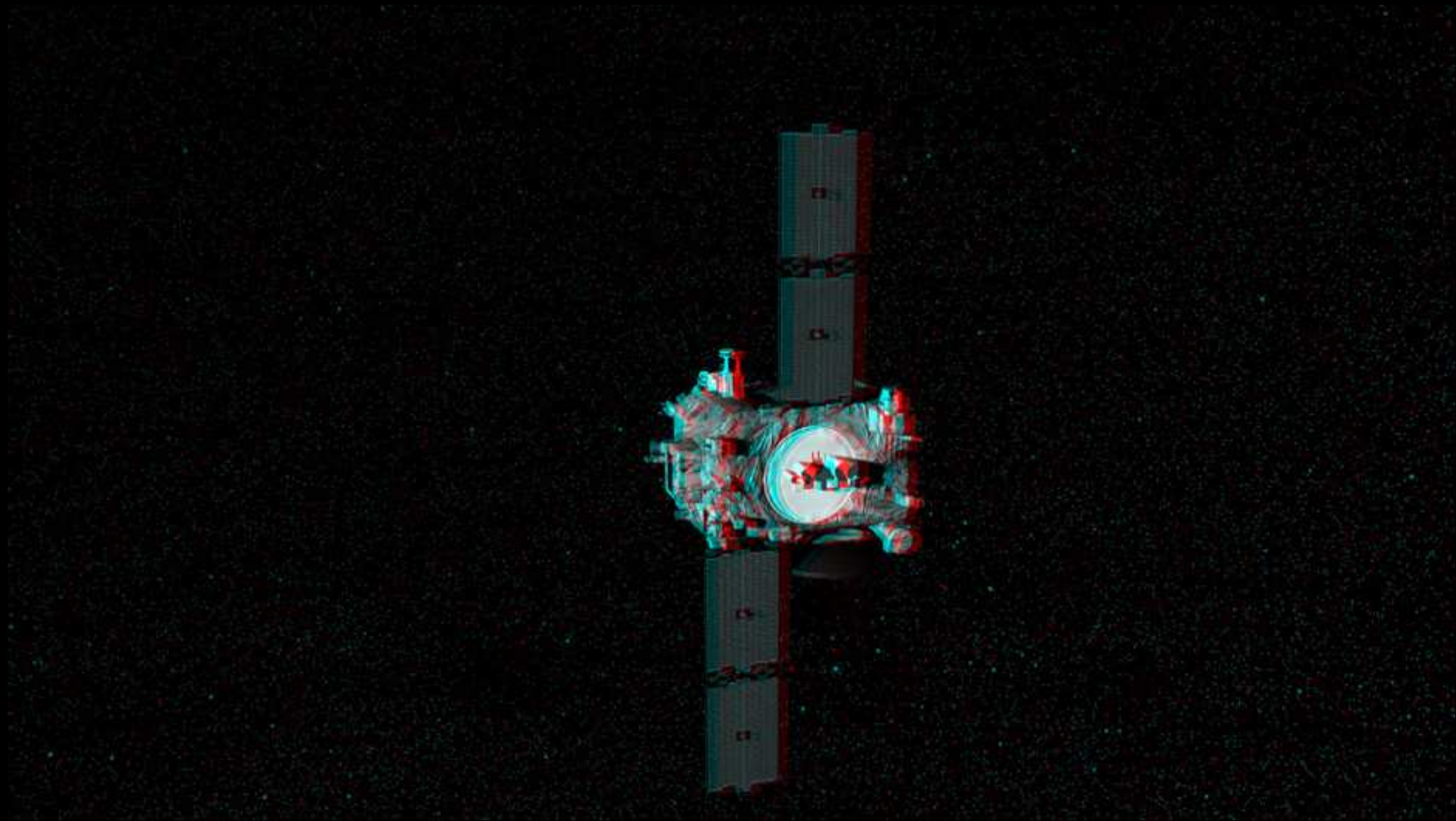
STEREO: Solar Terrestrial Relations Observatory

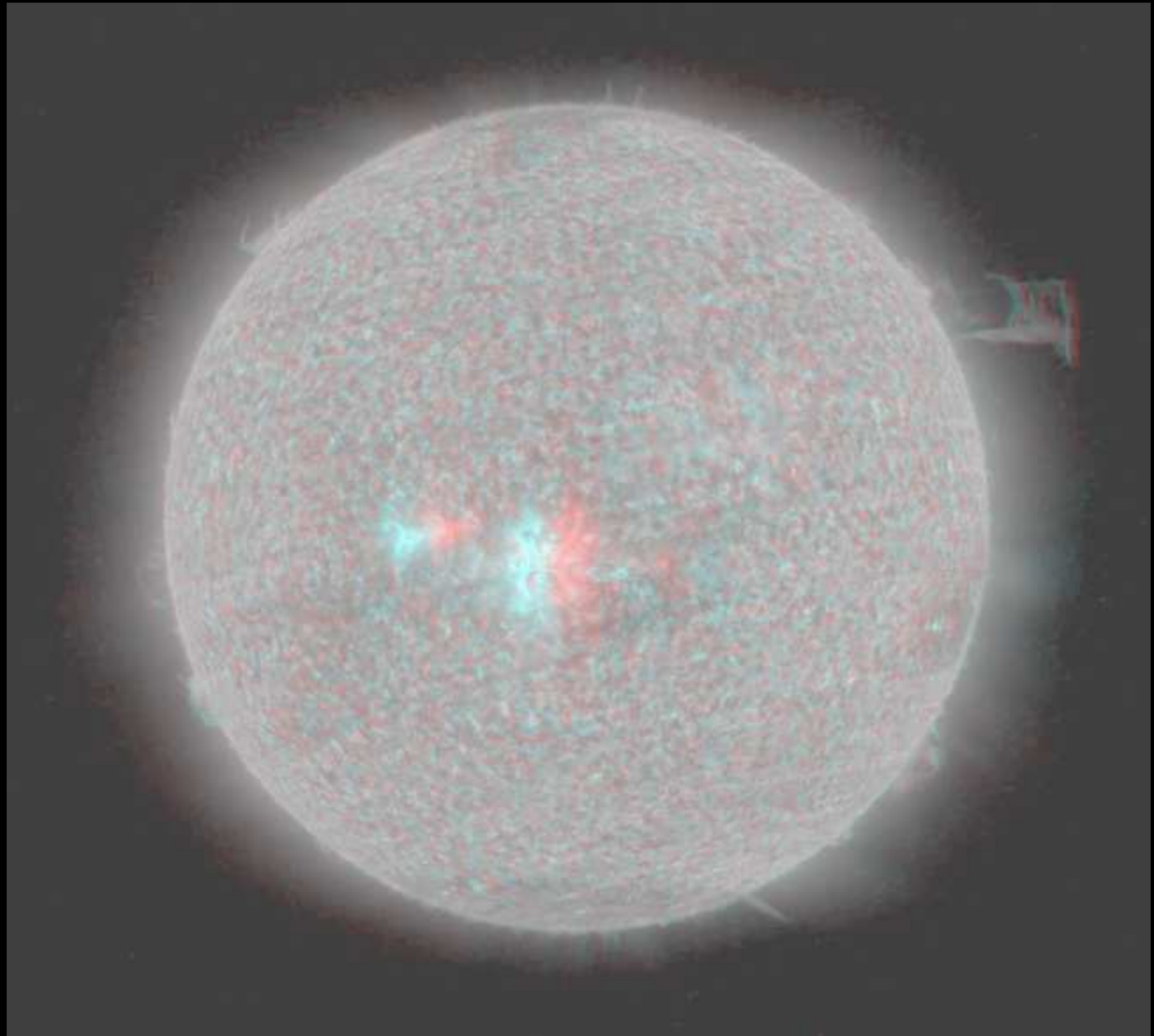
- Para sond NASA badających wyrzuty masy na Słońcu
- Start: 26.10.06, od 21.01.07 na orbicie heliocentrycznej (A – *ahead*, B – *behind*) z okresem 344/389 dni
- Wymiary: $1,1 \times 2 \times 1,2$ (6,5) m
- Masa całkowita: 620 kg
- Czas trwania misji: kilka lat

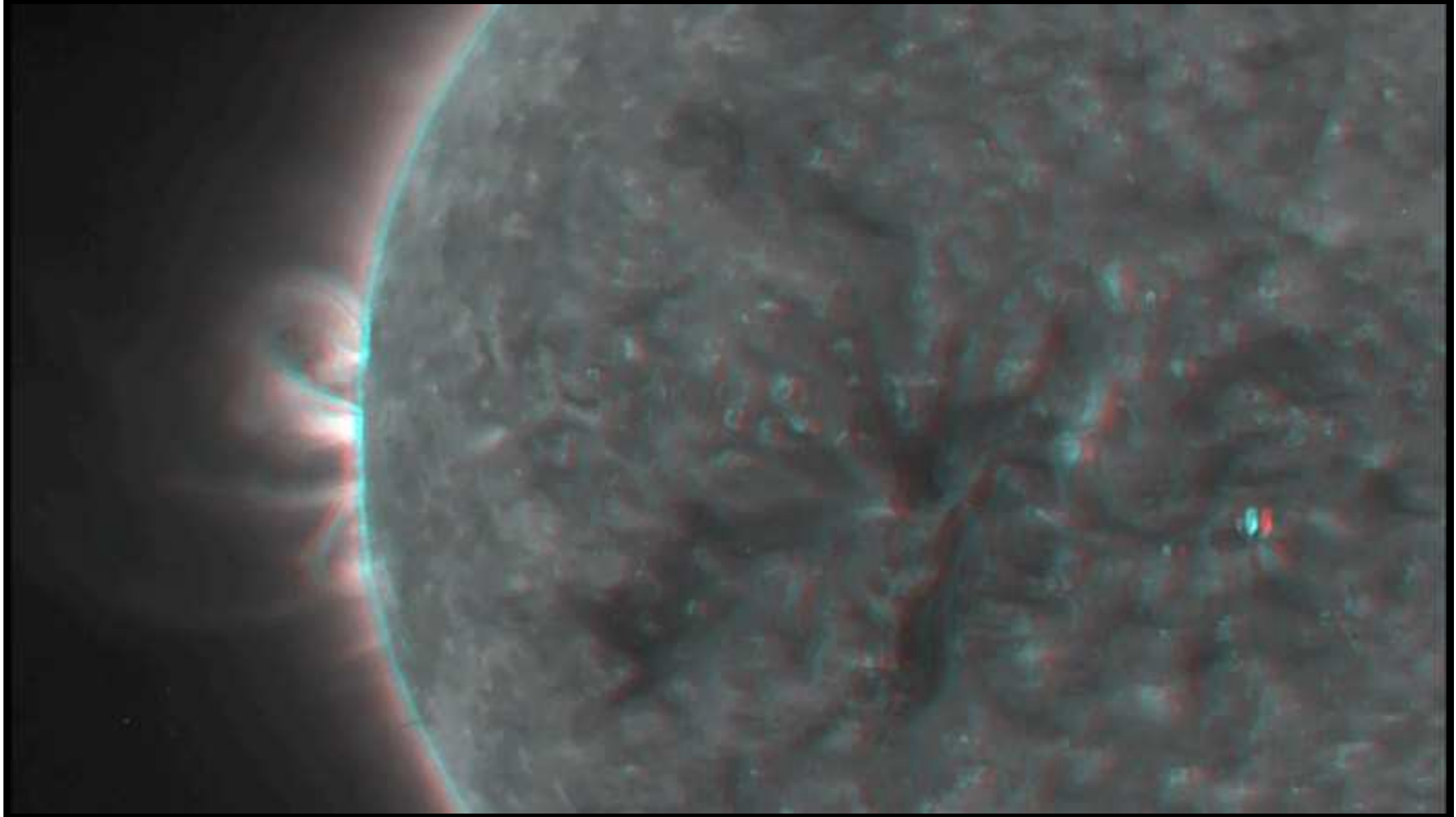


A teraz proszę założyć okulary 😊

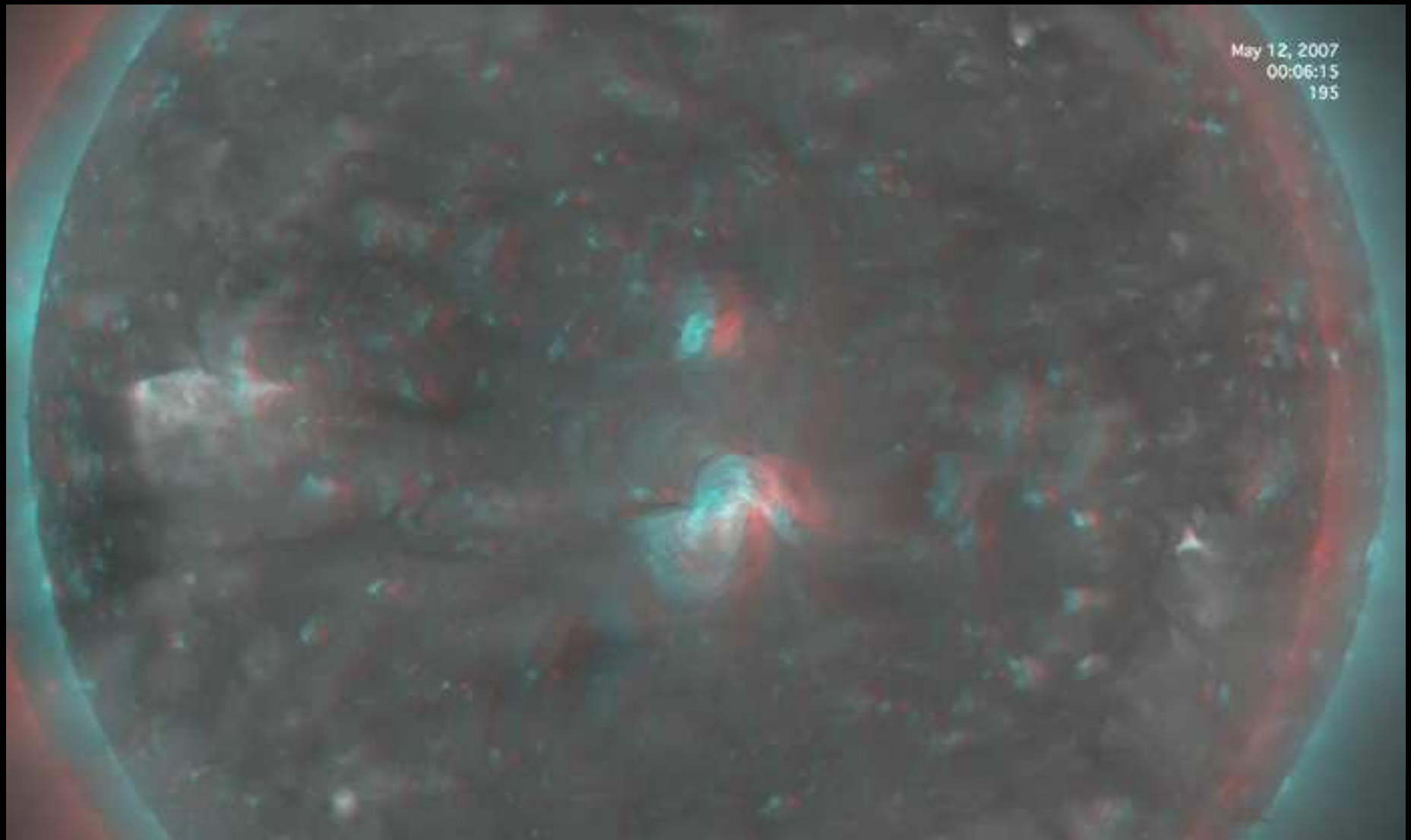


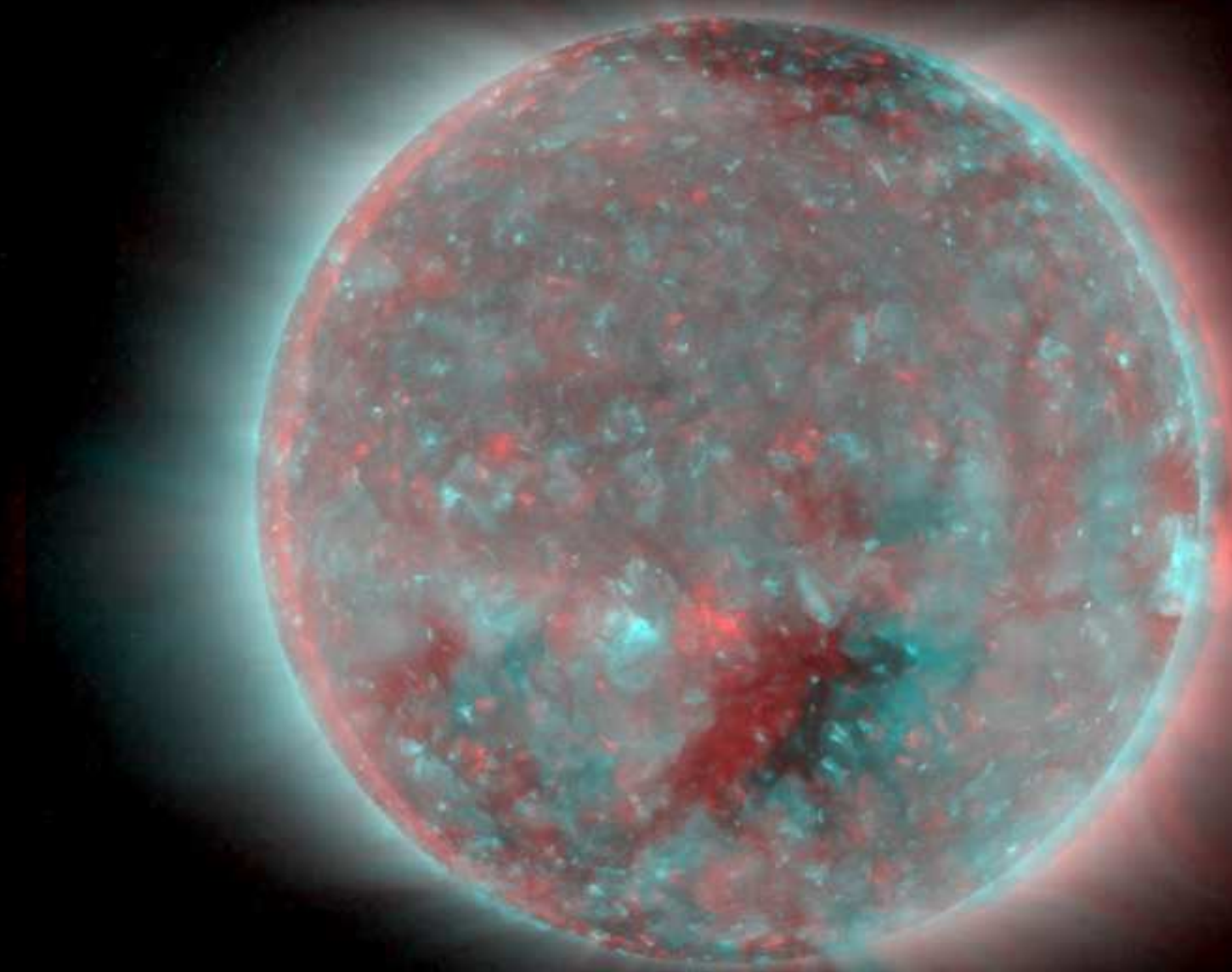


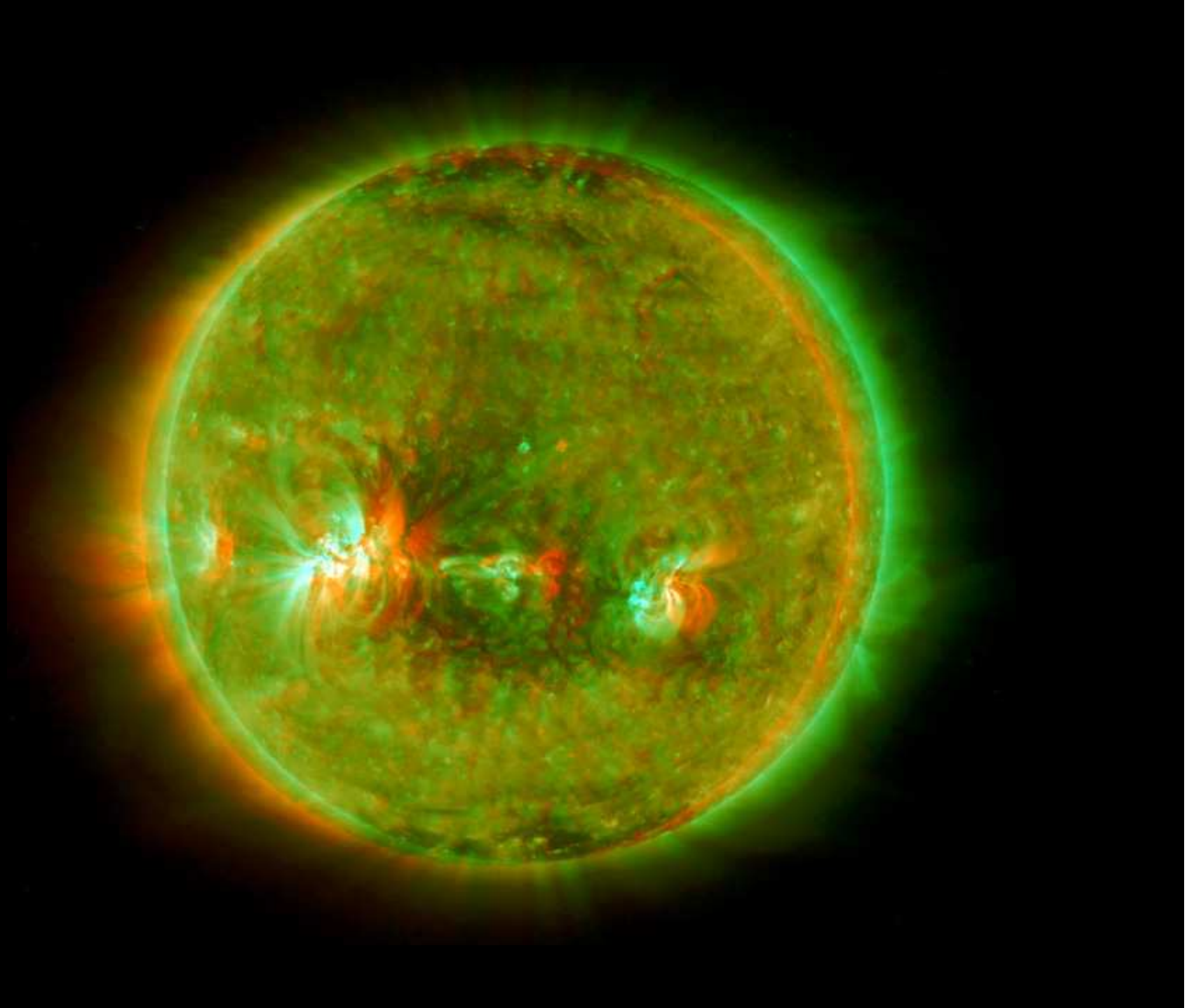


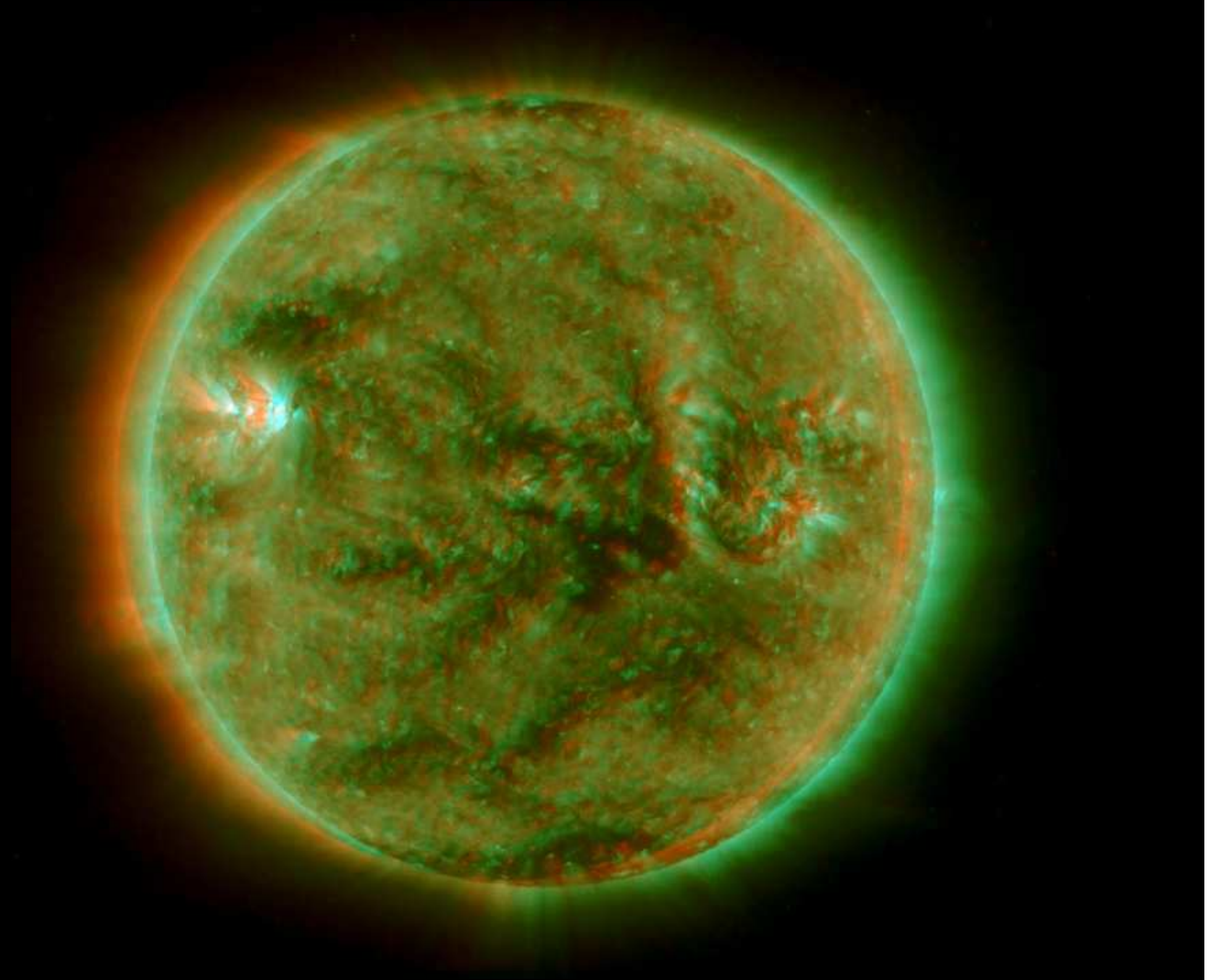


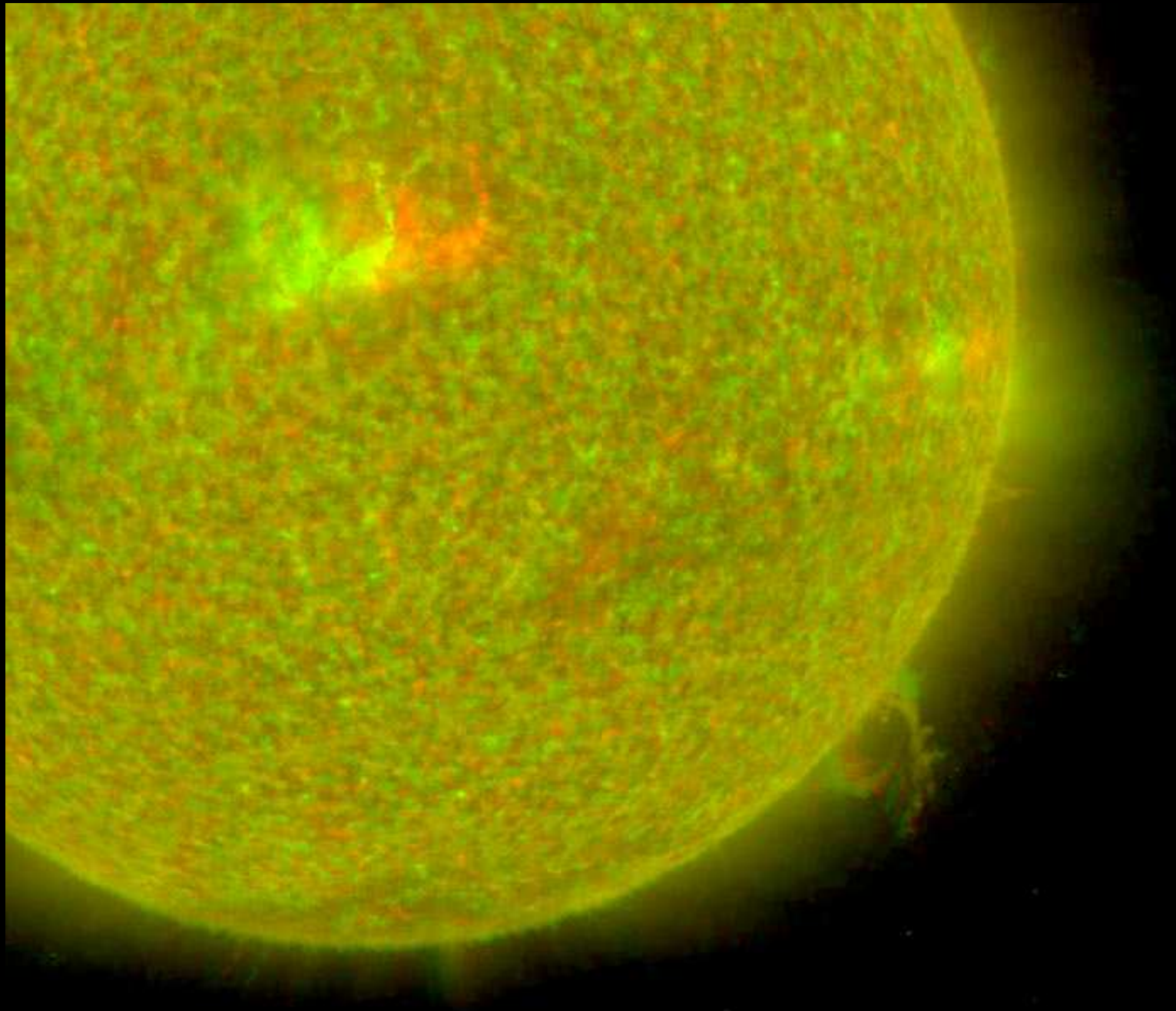
May 12, 2007
00:06:15
195

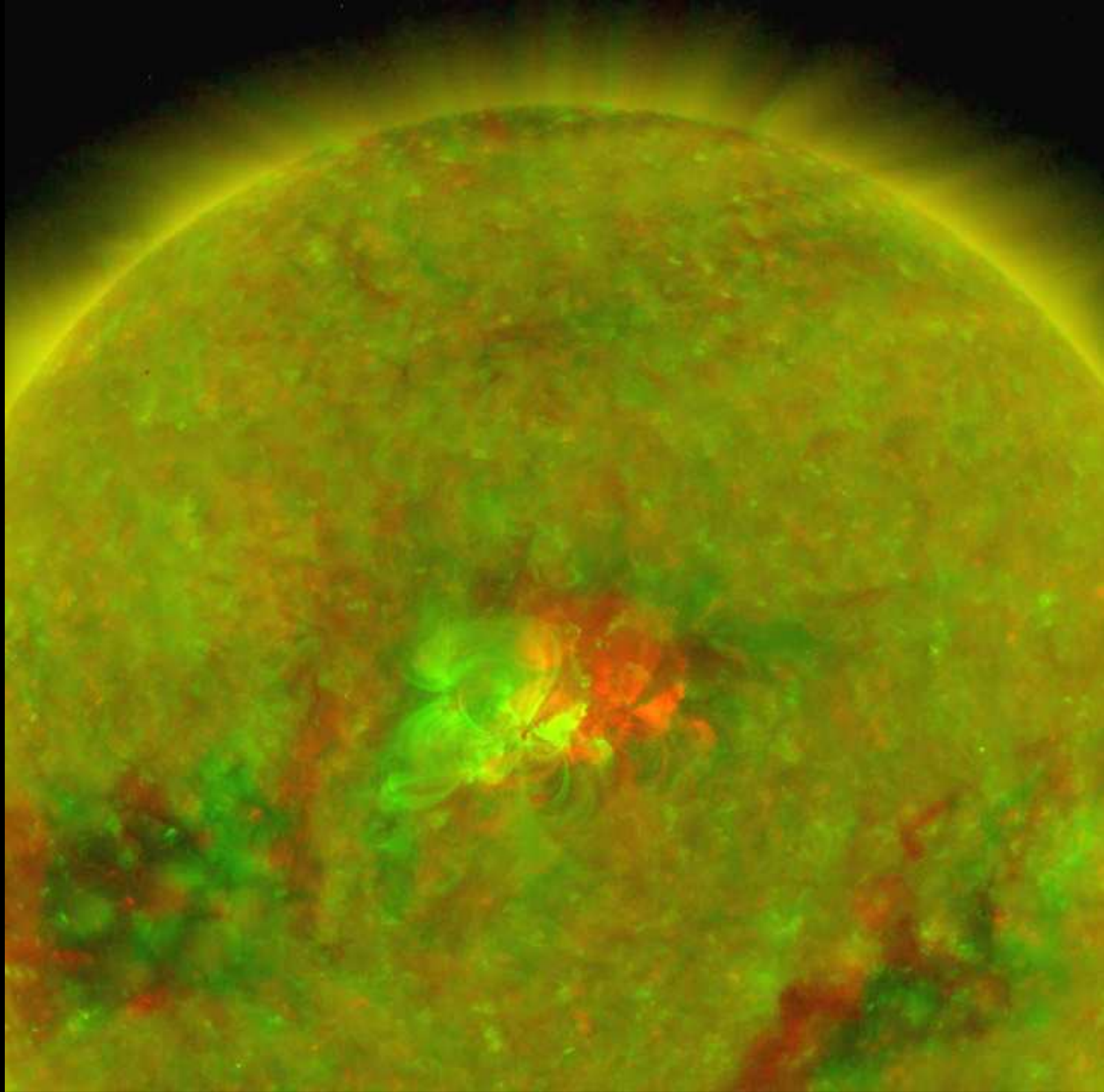


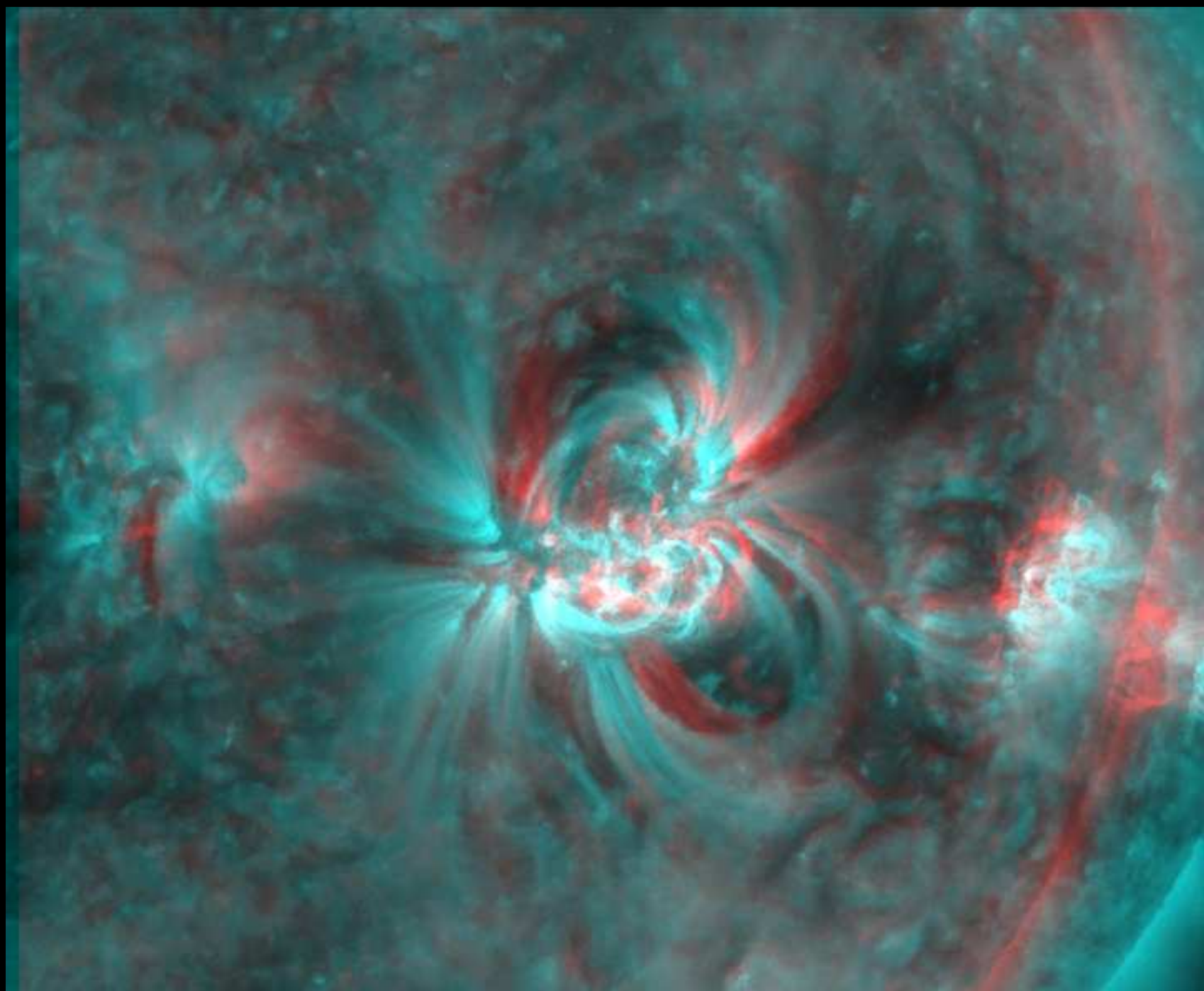






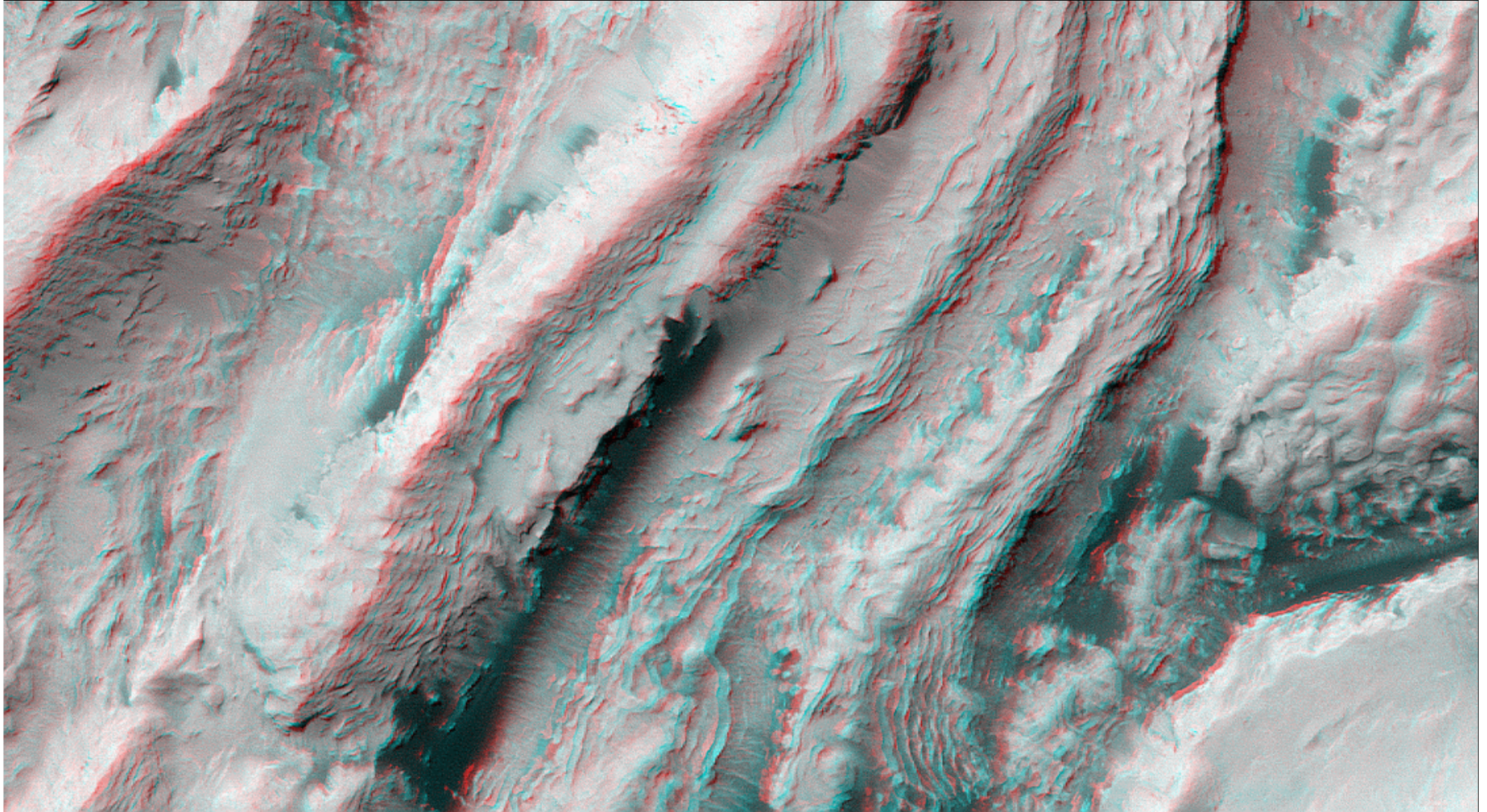




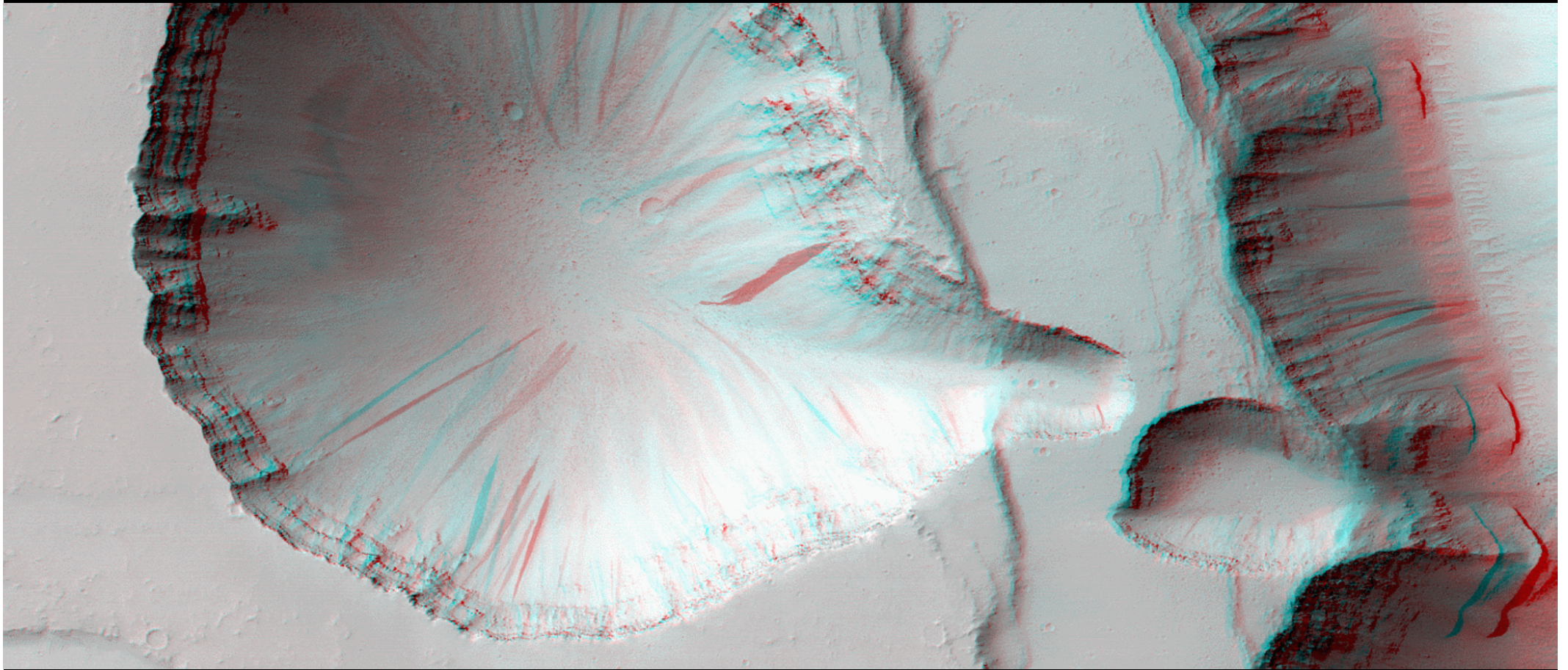




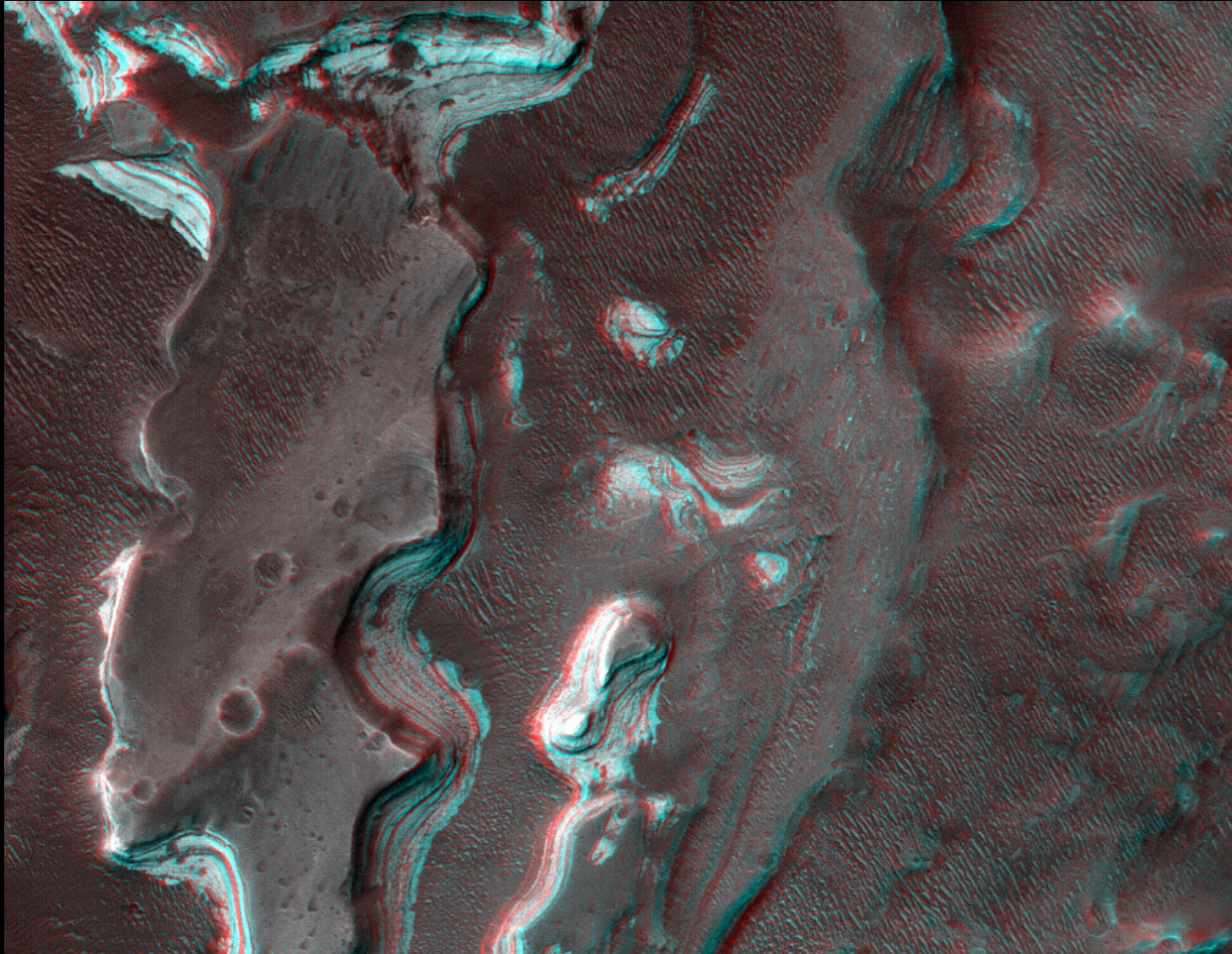
Mars: Aeolis



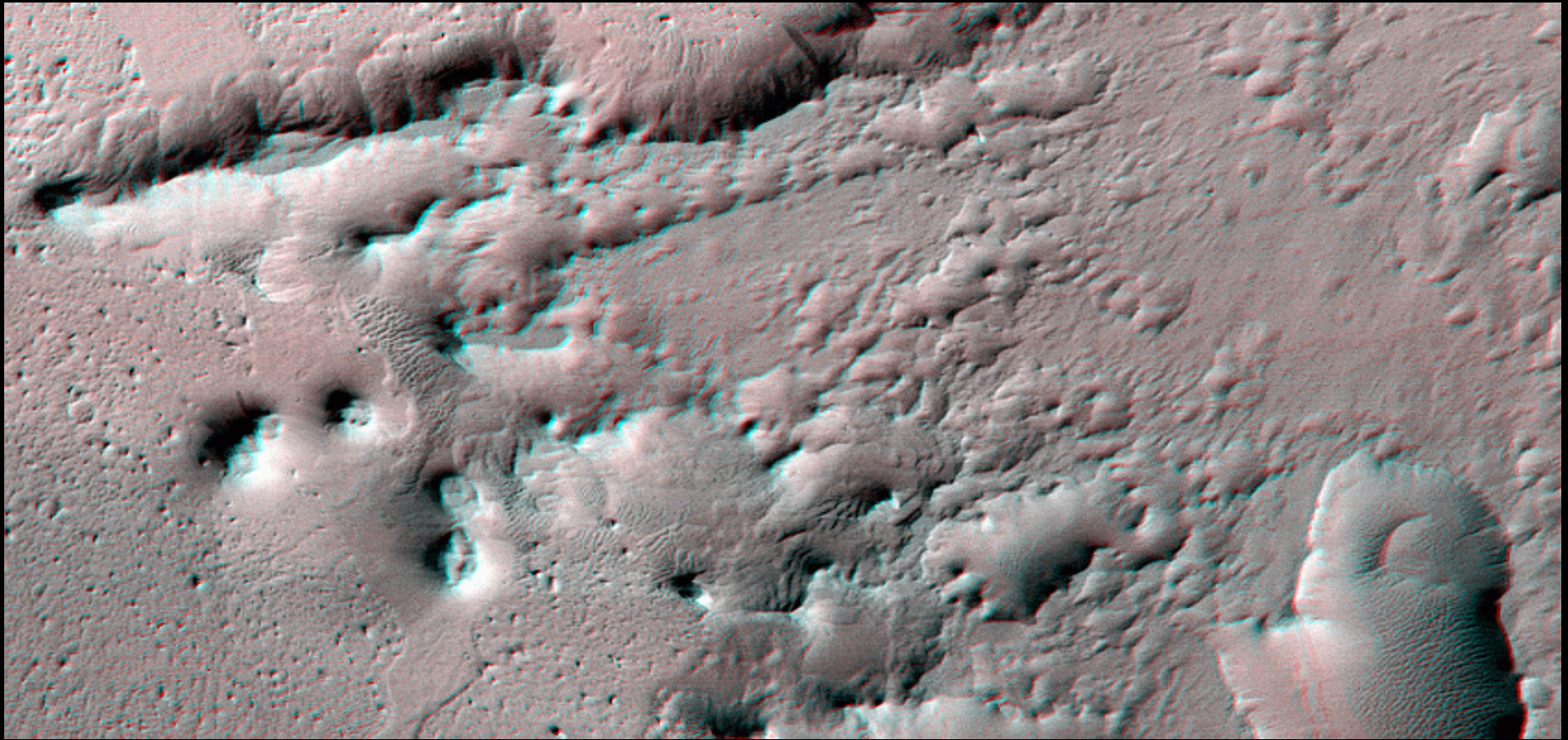
Mars: Ceraunius Fossae Pit



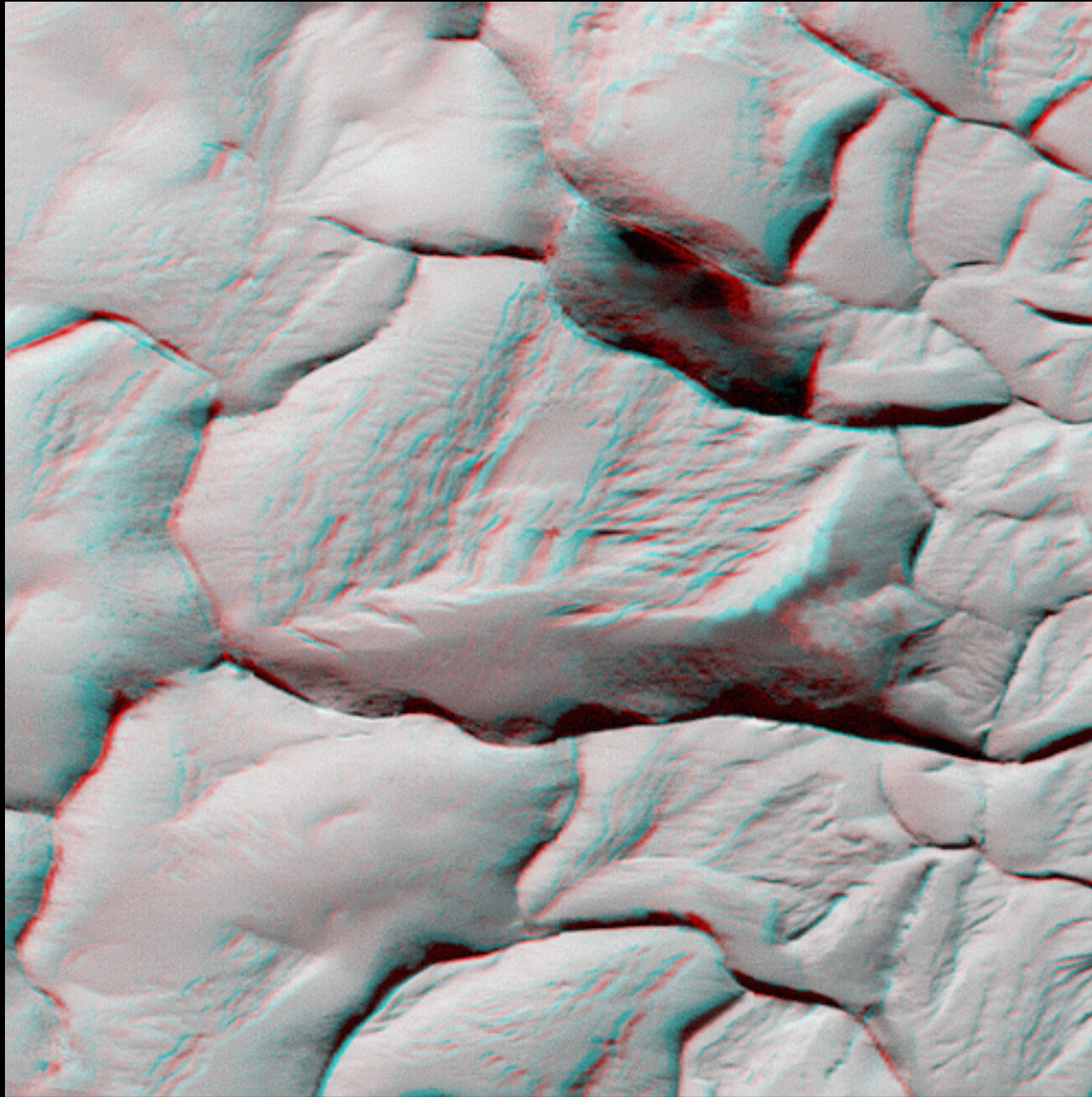
Mars: Holden Crater



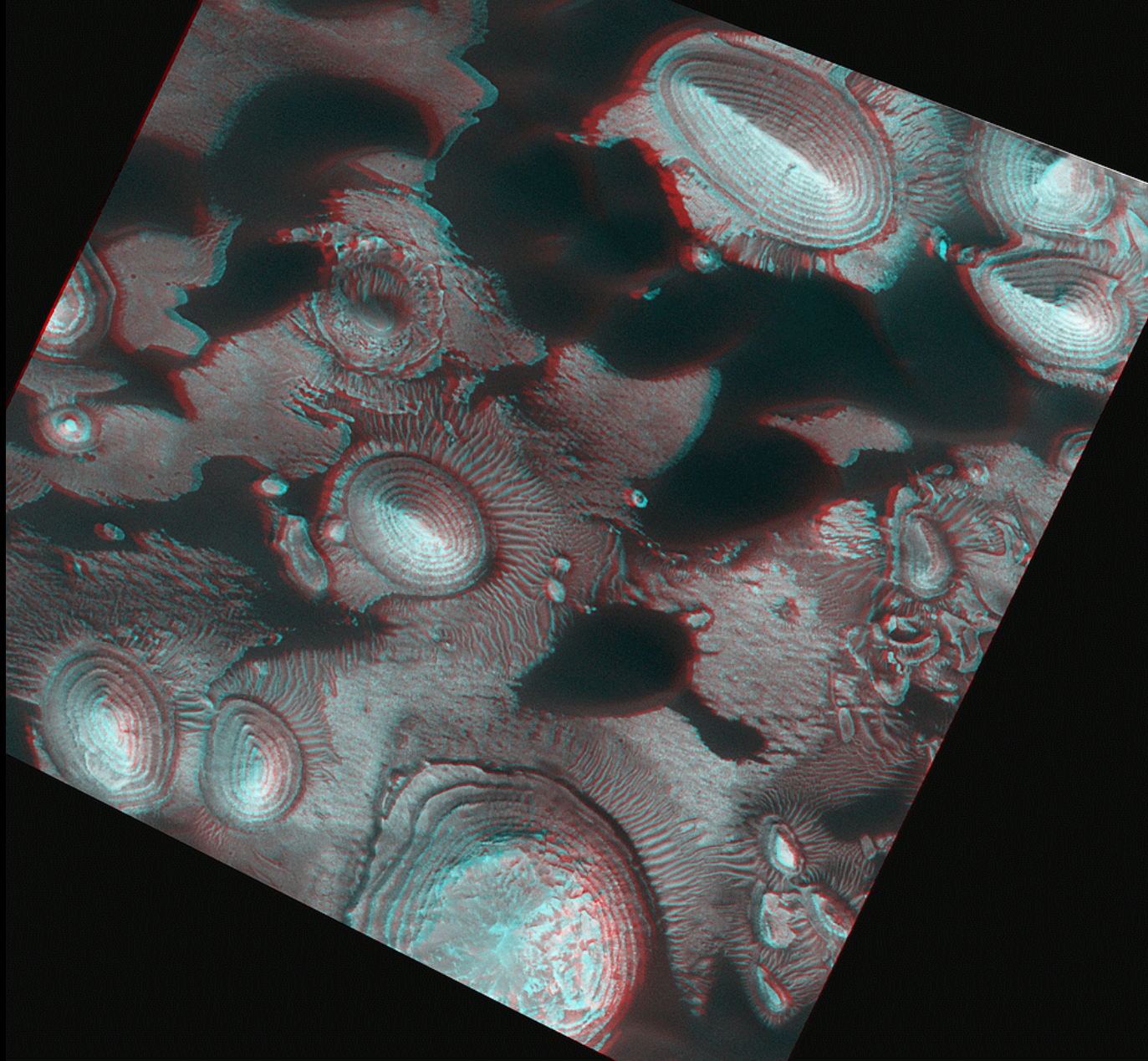
Mars: Amazonis



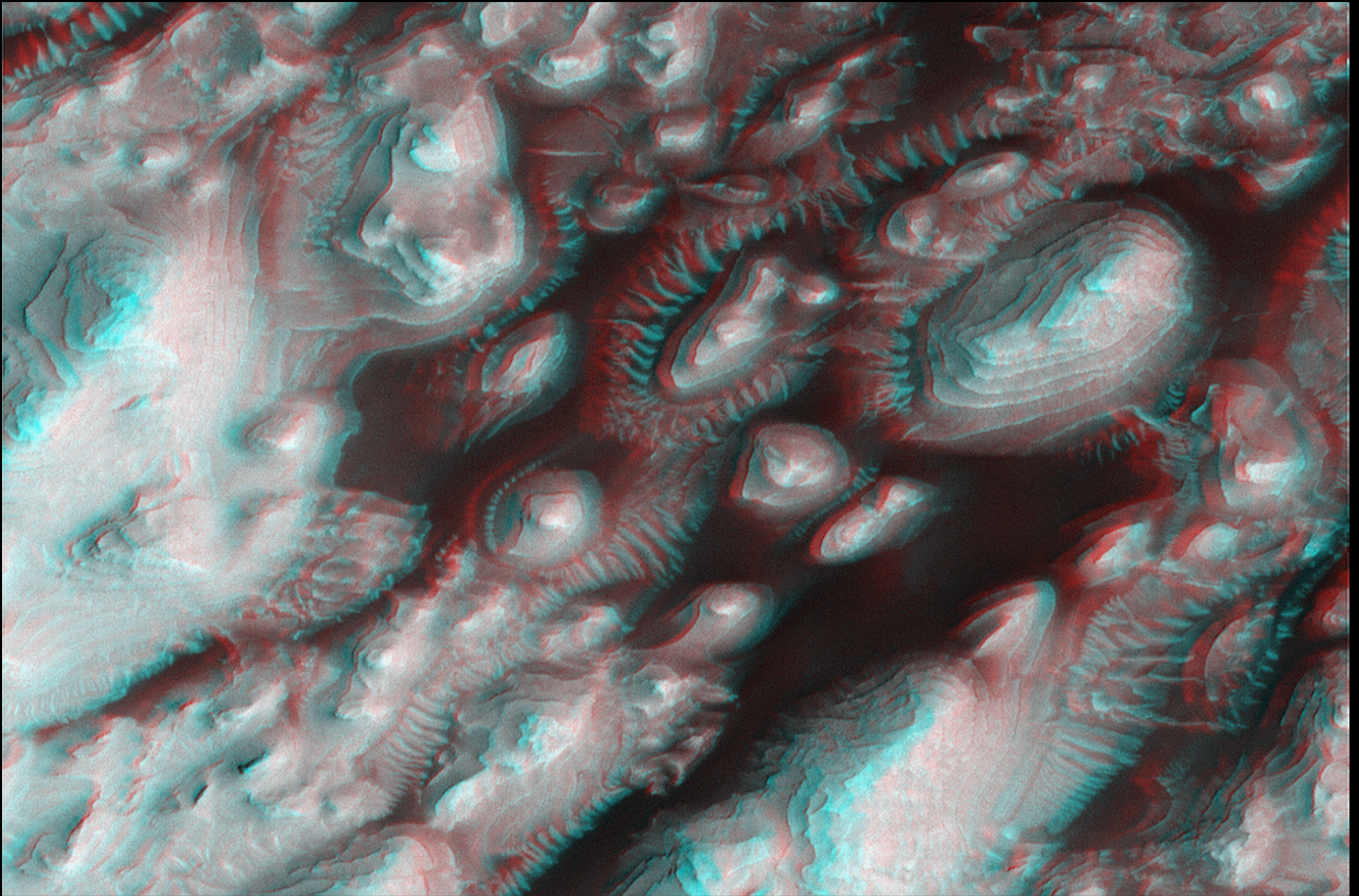
Mars: Amazonis Region Dunes



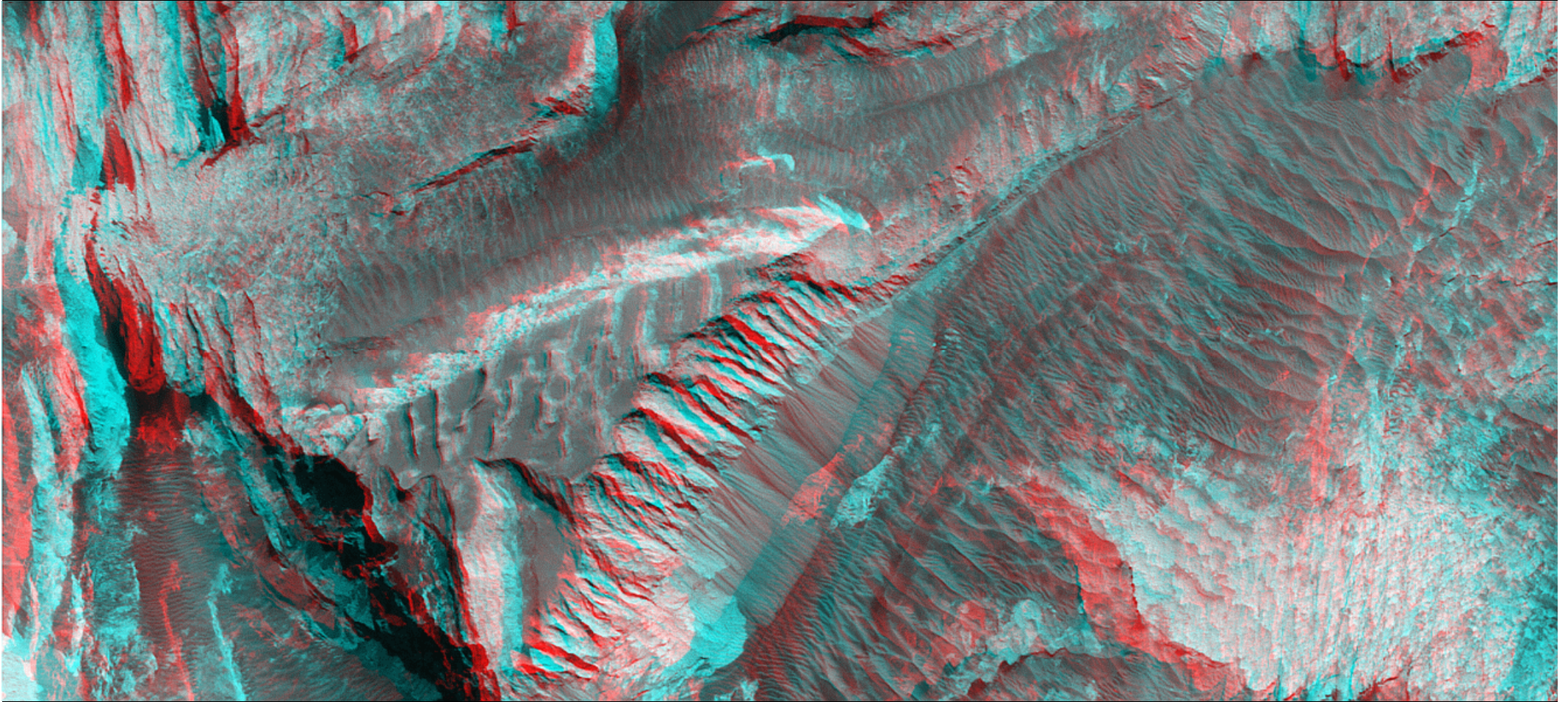
Mars: Arabia Terra



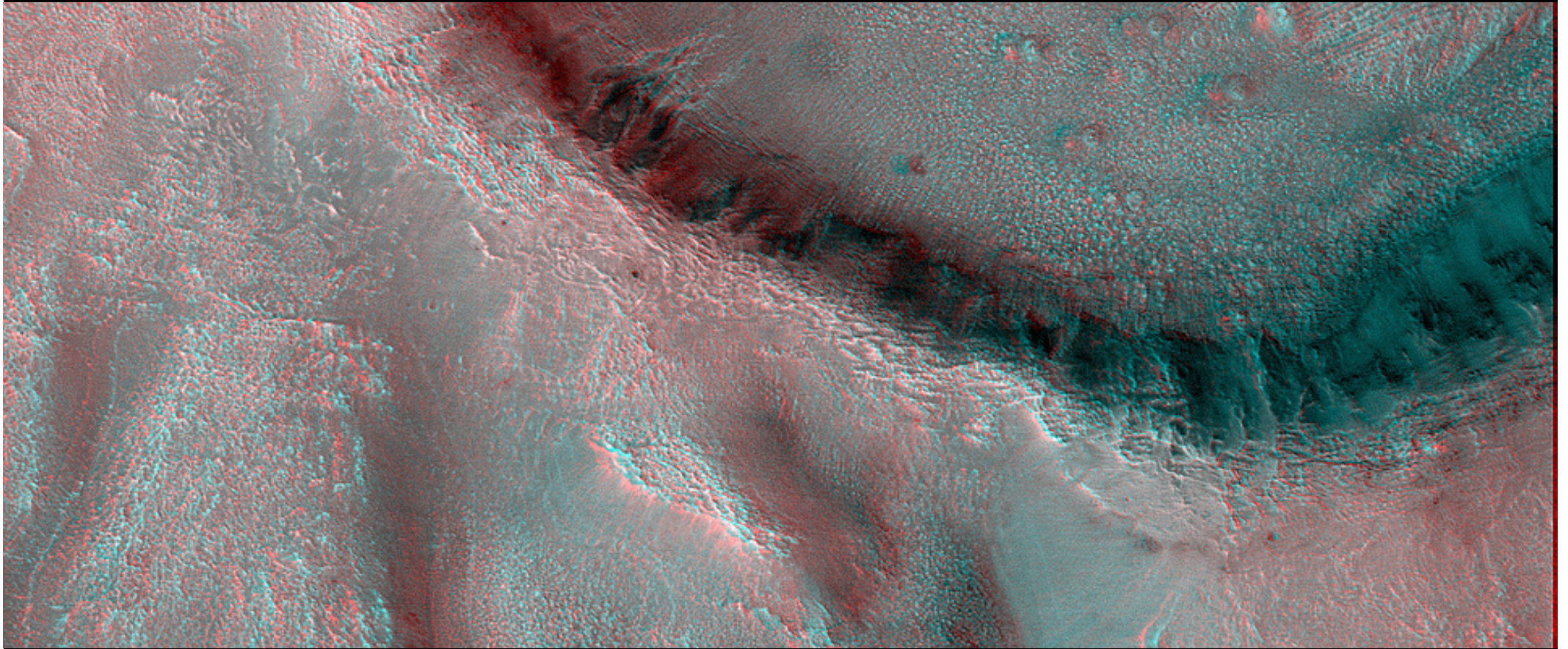
Mars: Arabia Terra

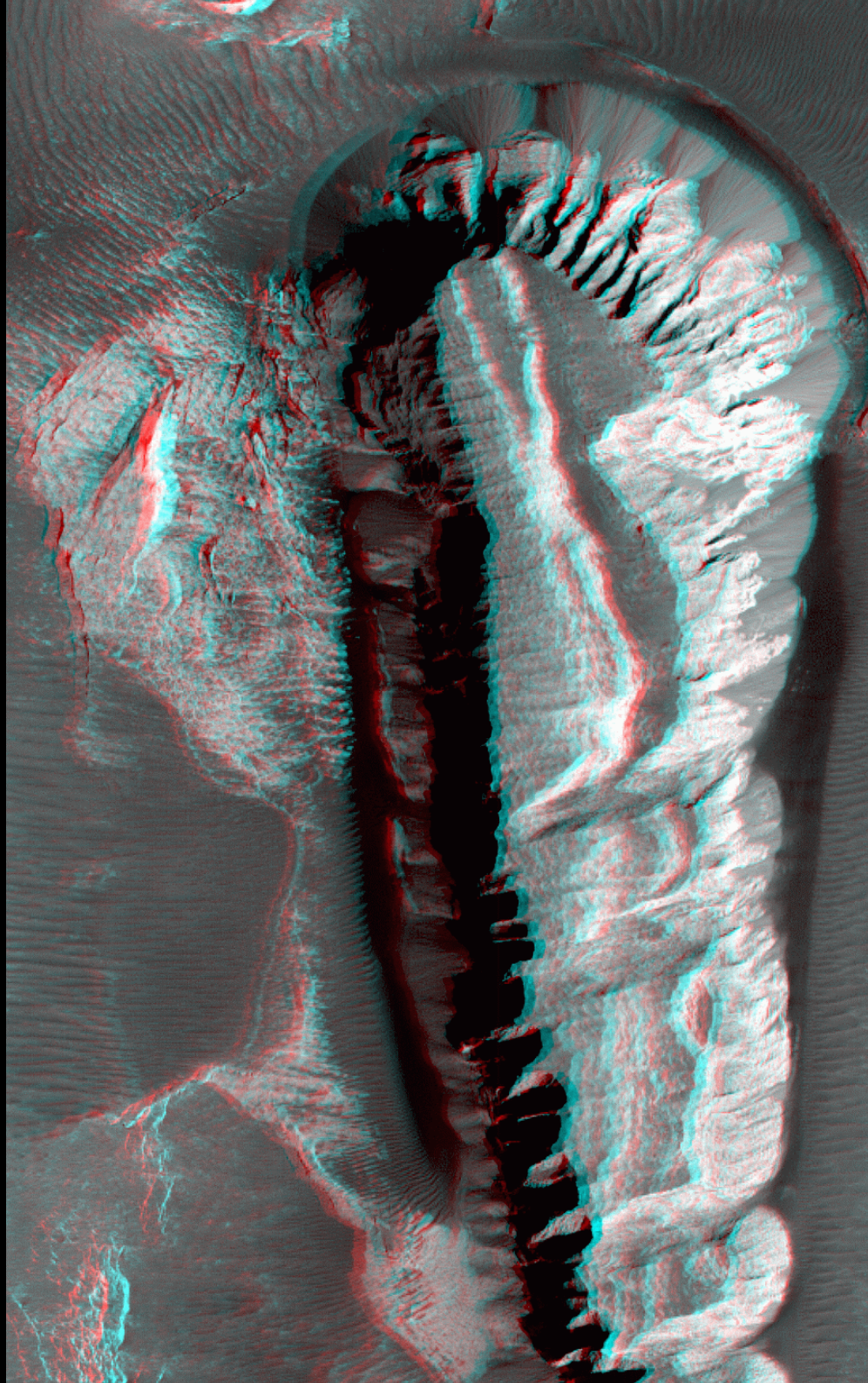


Mars: Aram Chaos



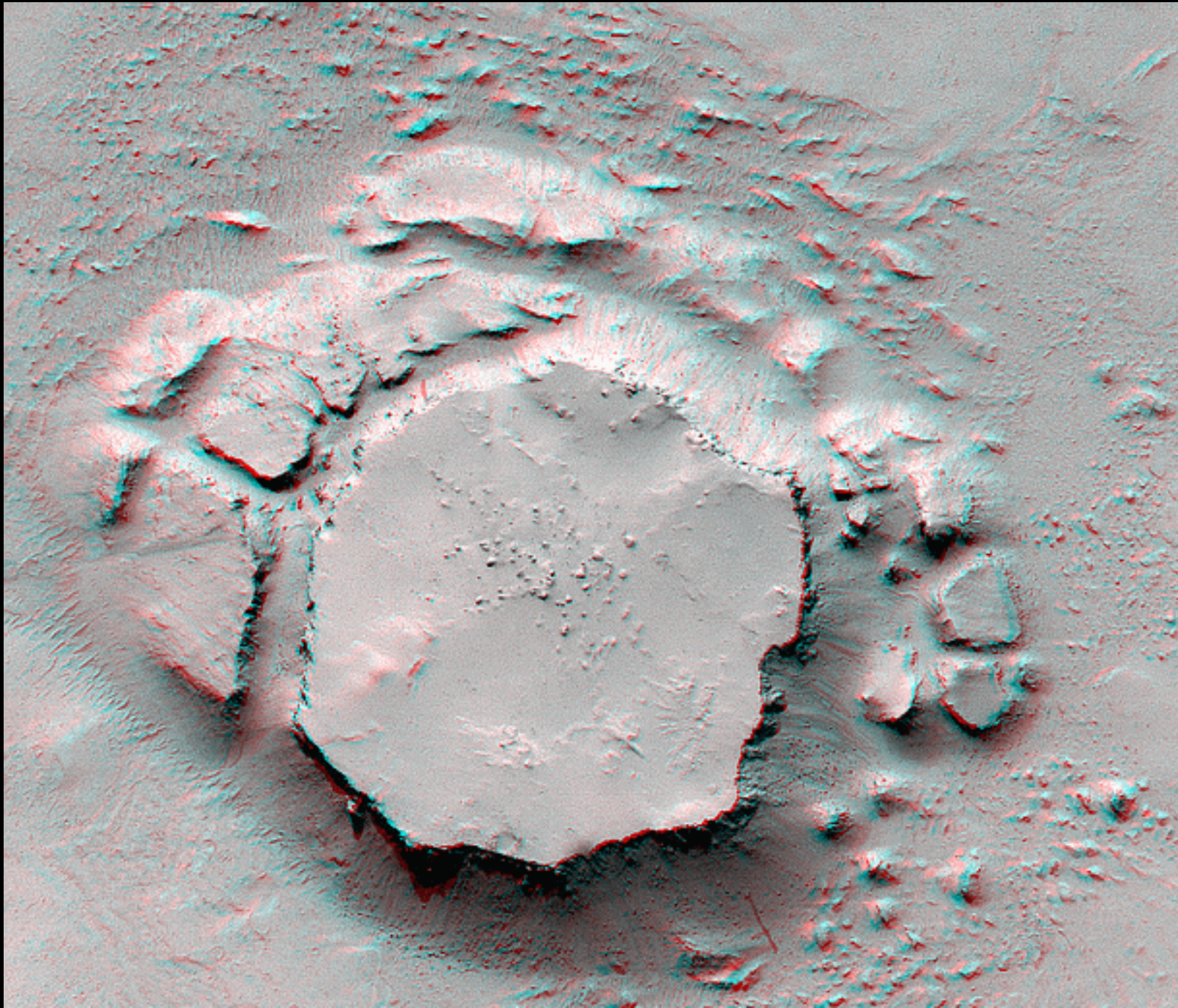
Mars: Argyre

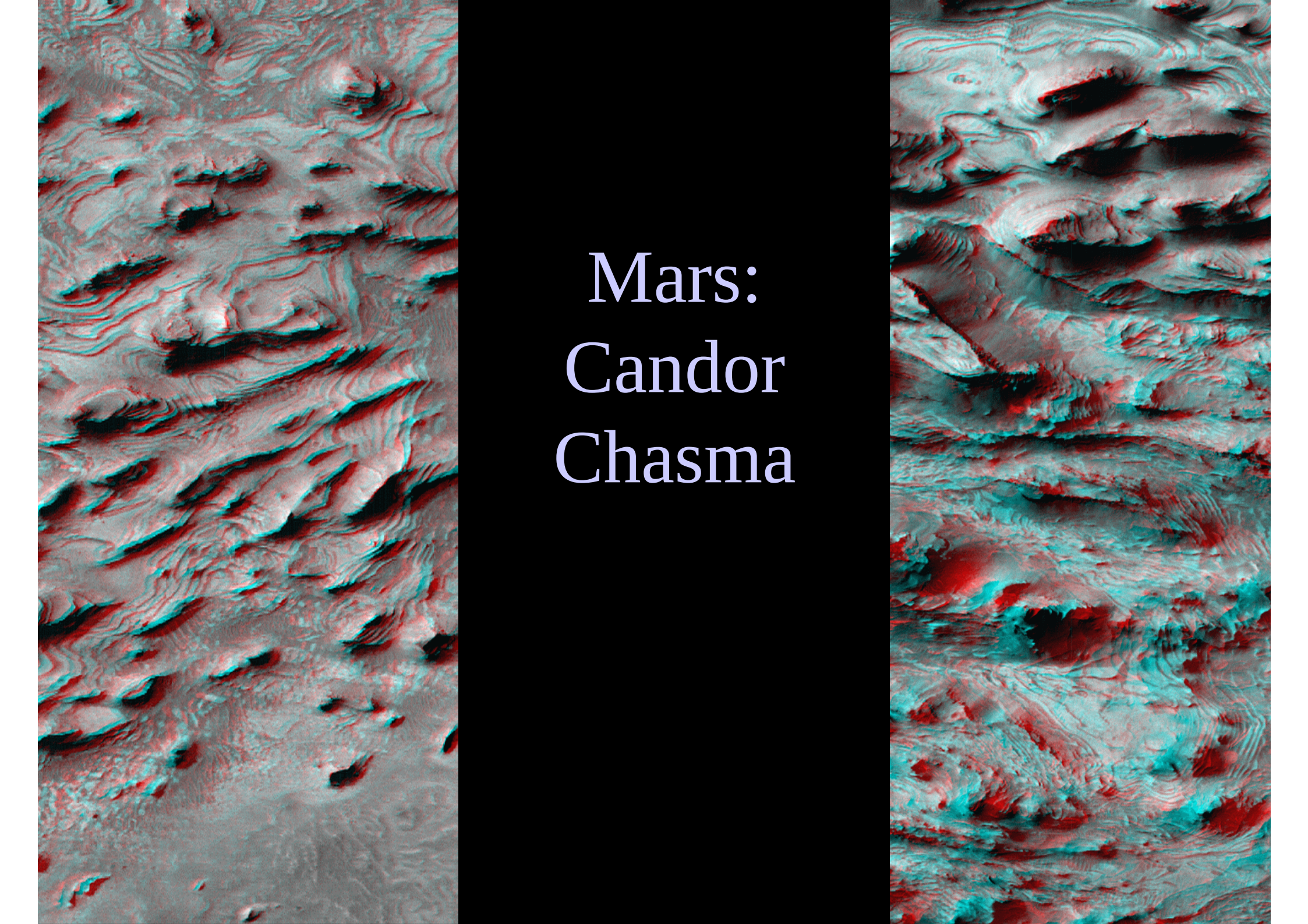




Mars: Aureum Chaos

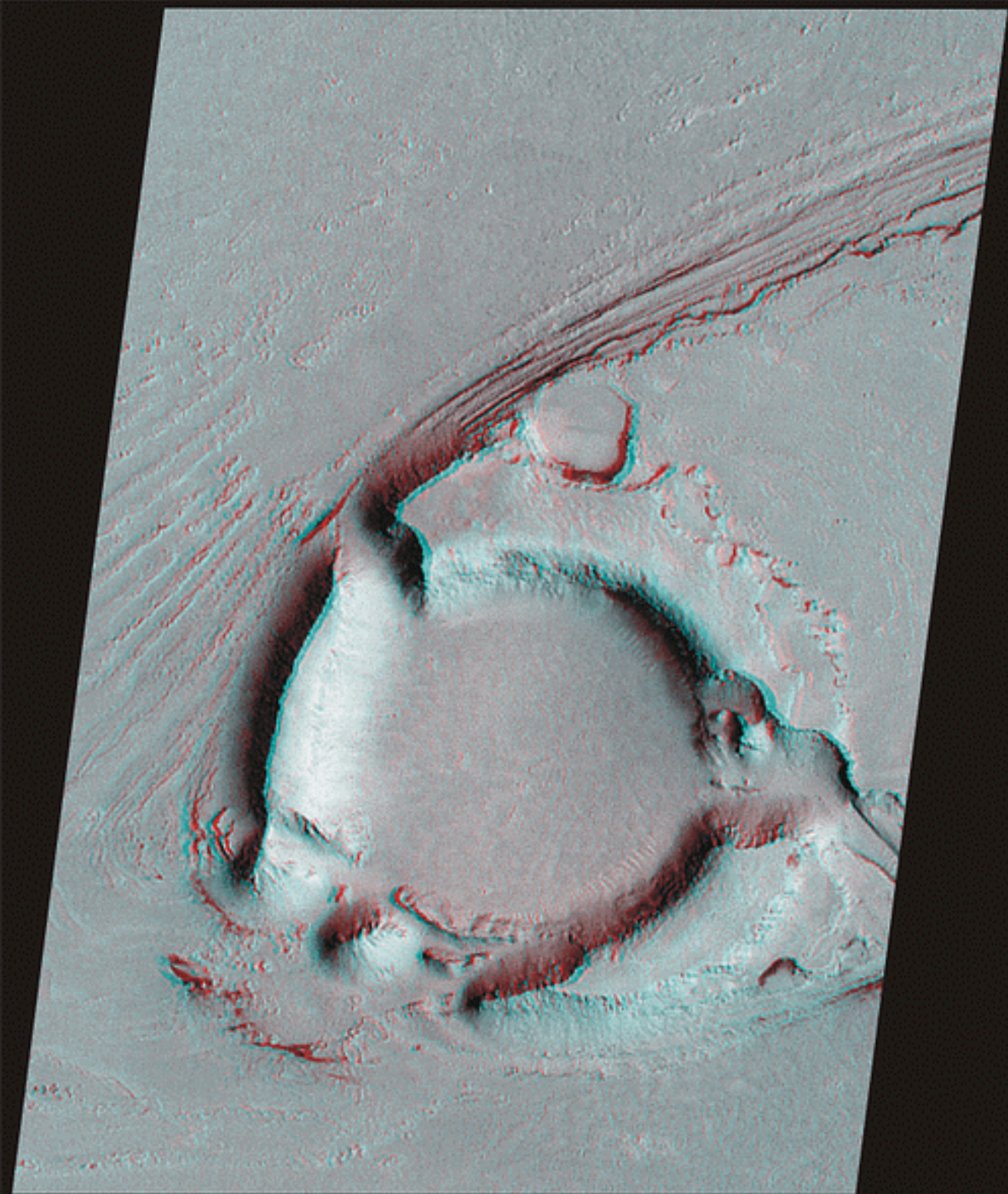
Mars: Avernus Colles



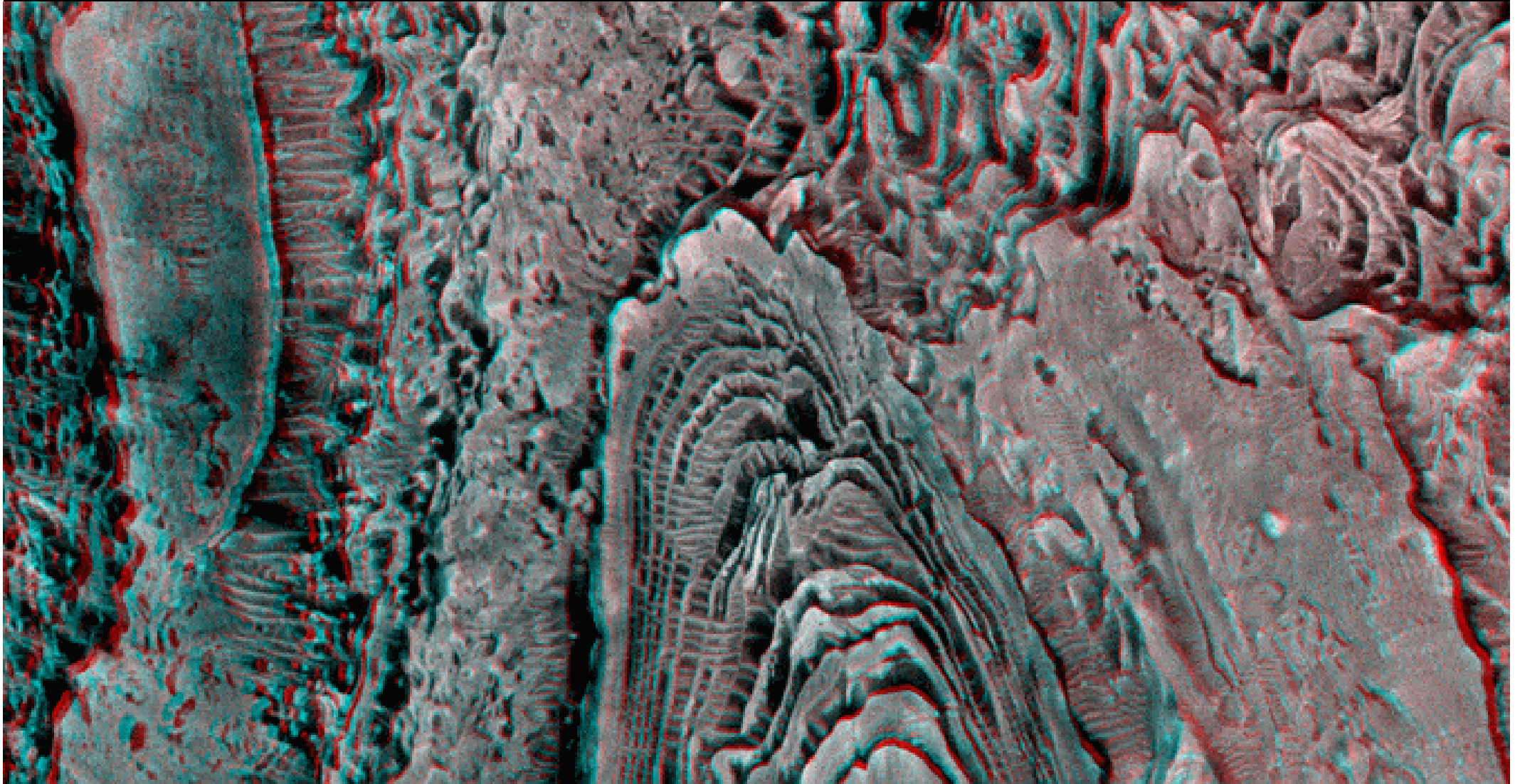


Mars: Candor Chasma

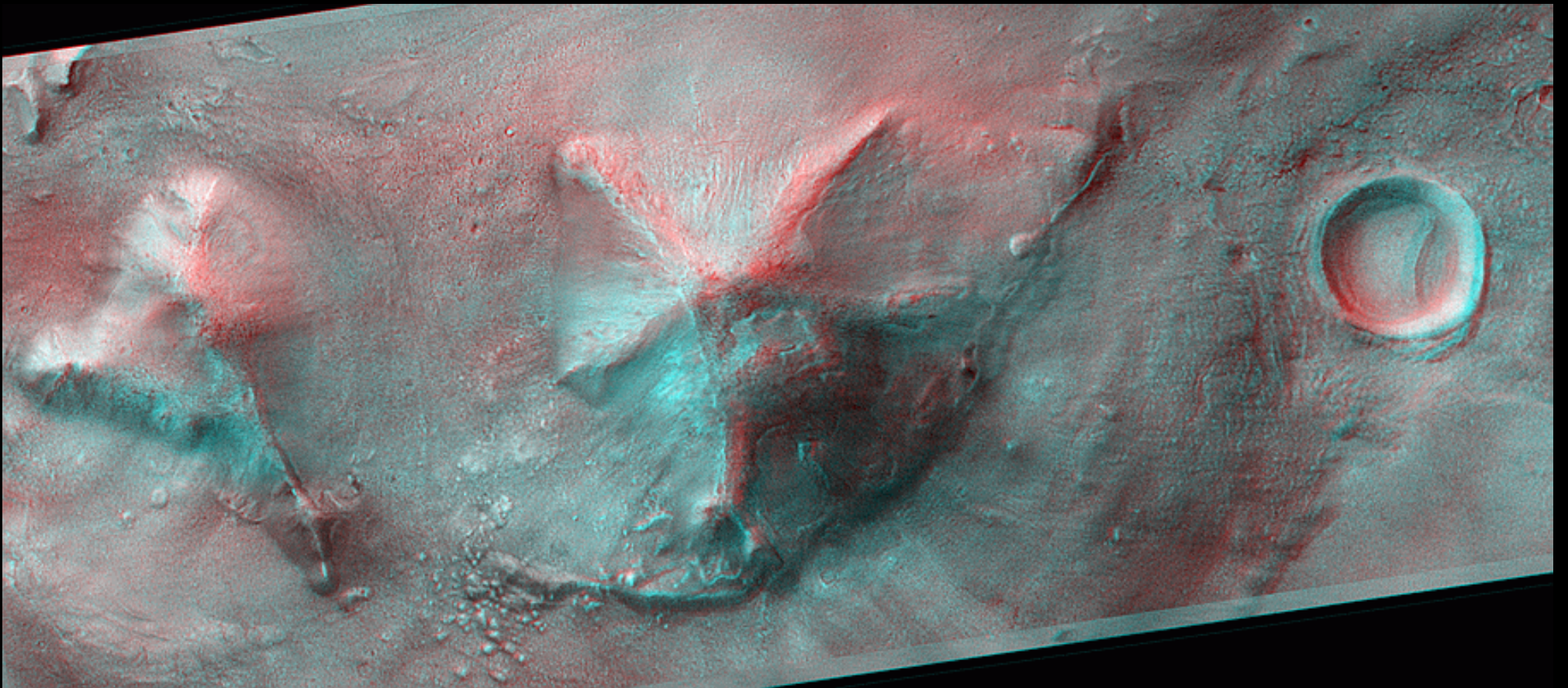
Mars: Cerberus

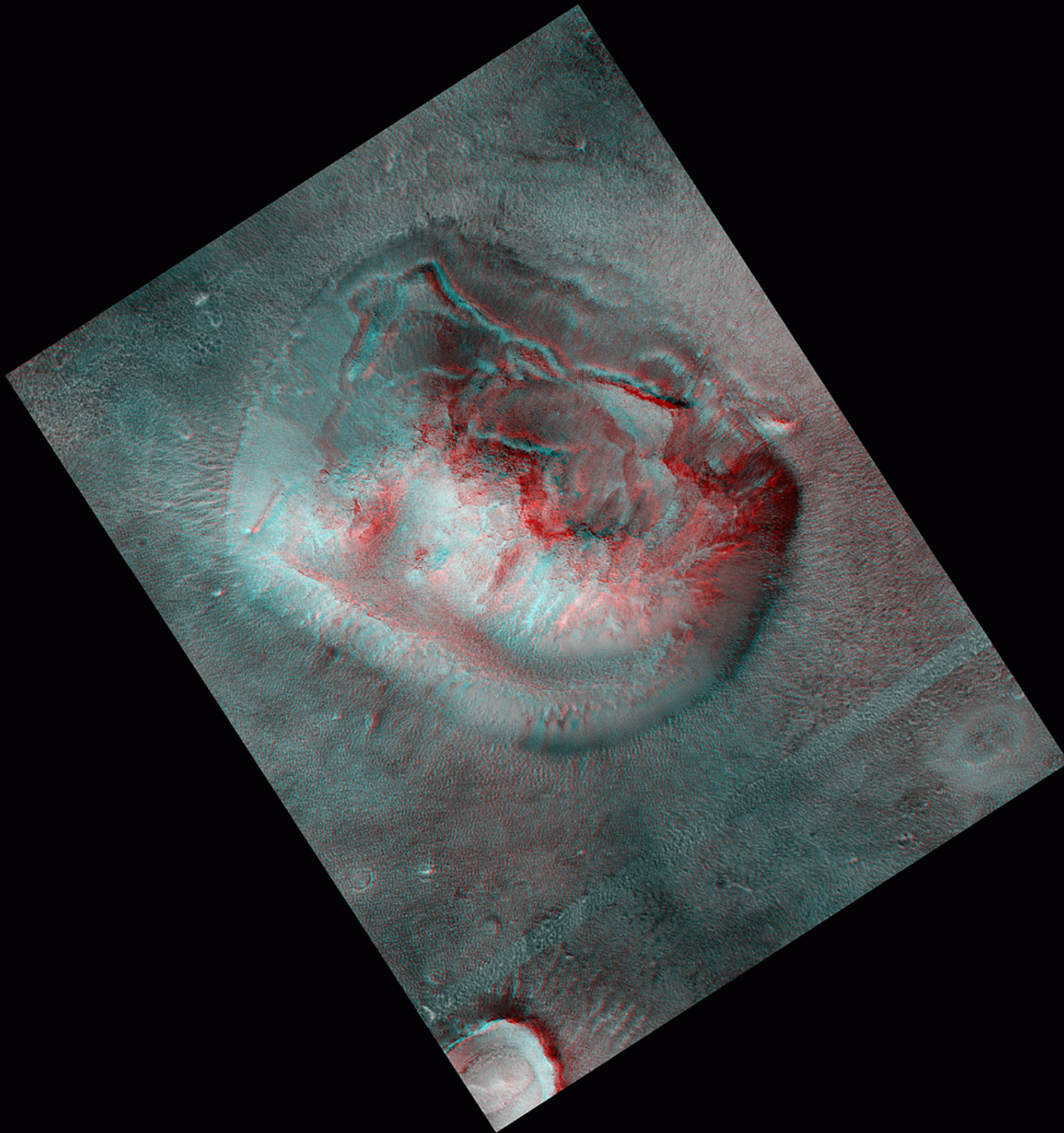


Mars: Crommelin Crater

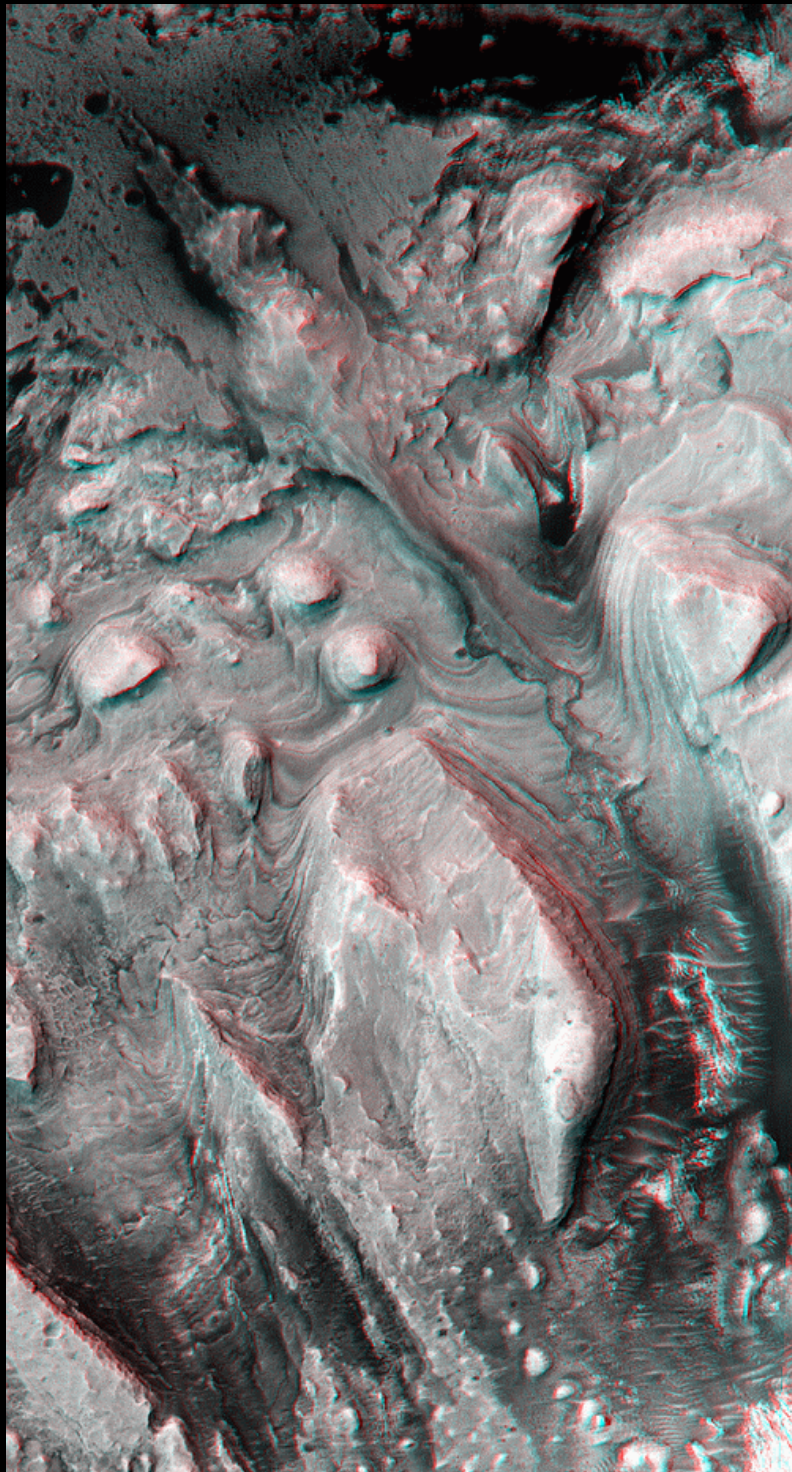


Mars: Cydonia



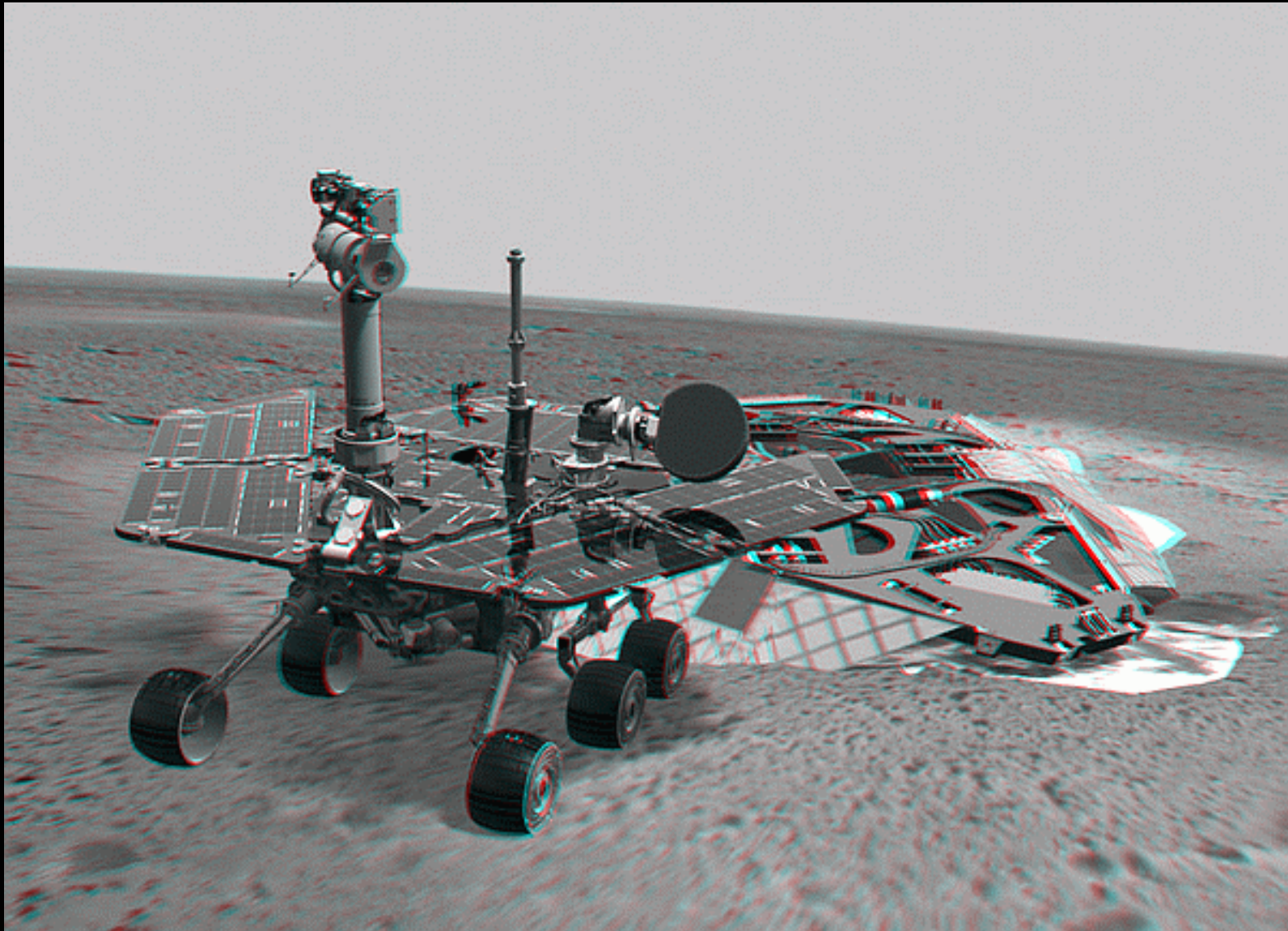


Mars:
Cydonia
Face

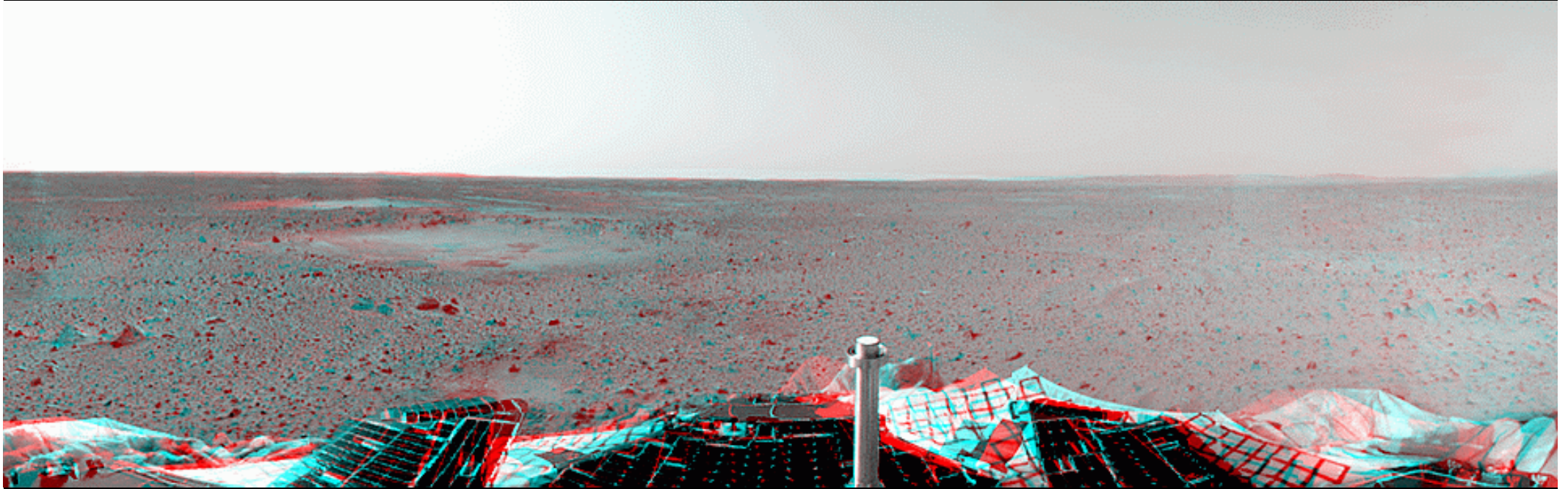


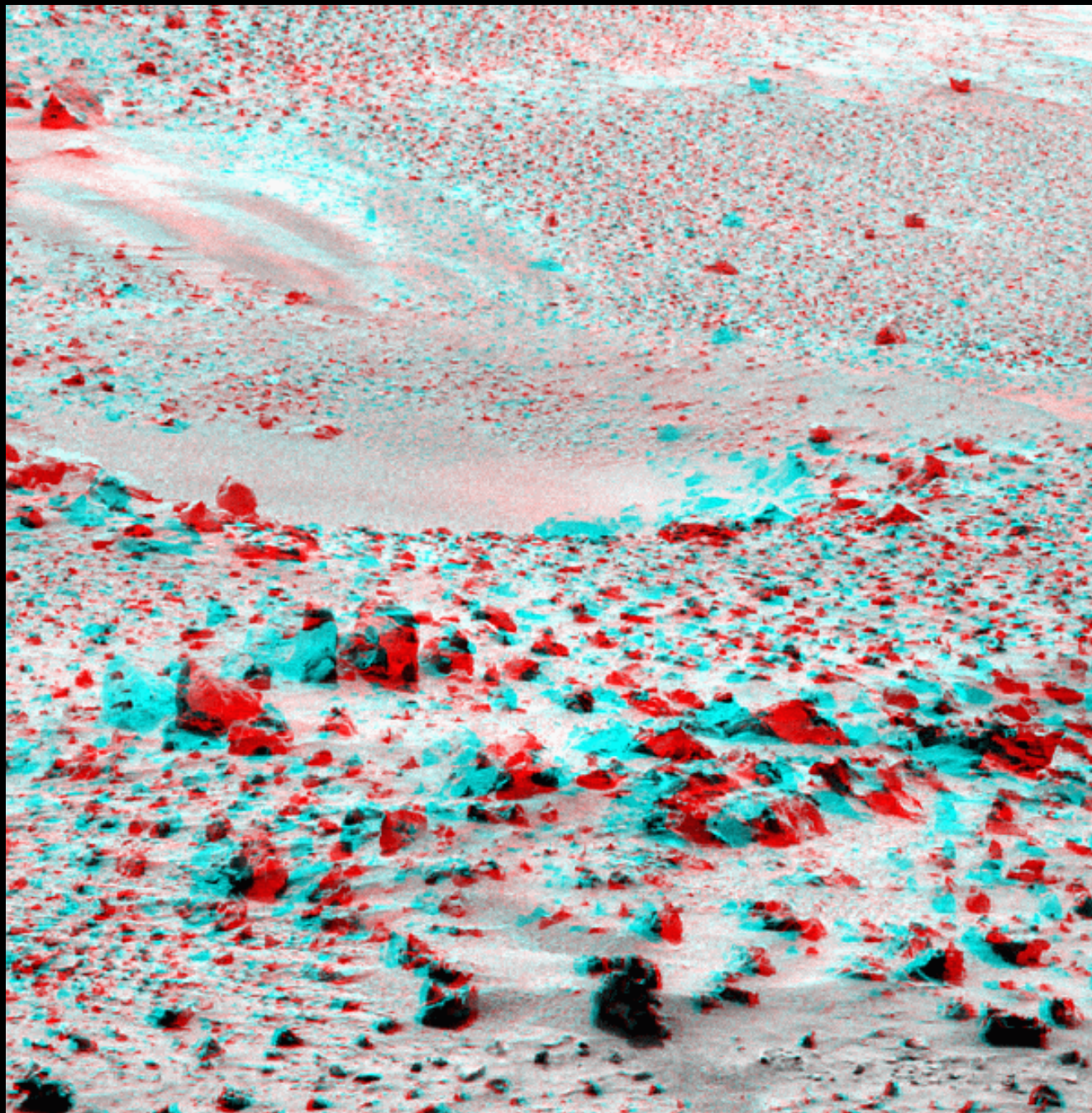
Mars: Gale Crater

Mars: Spirit

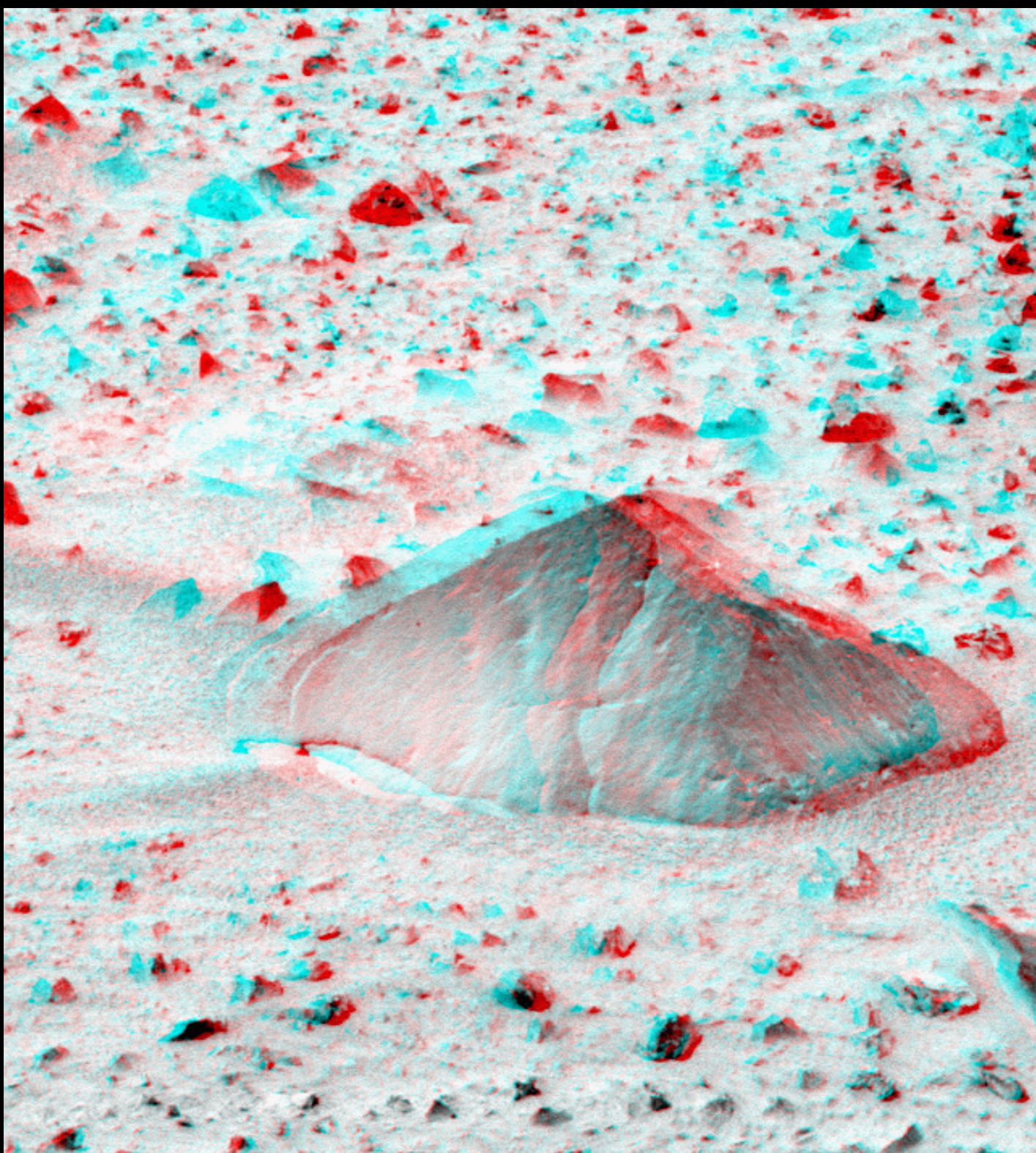


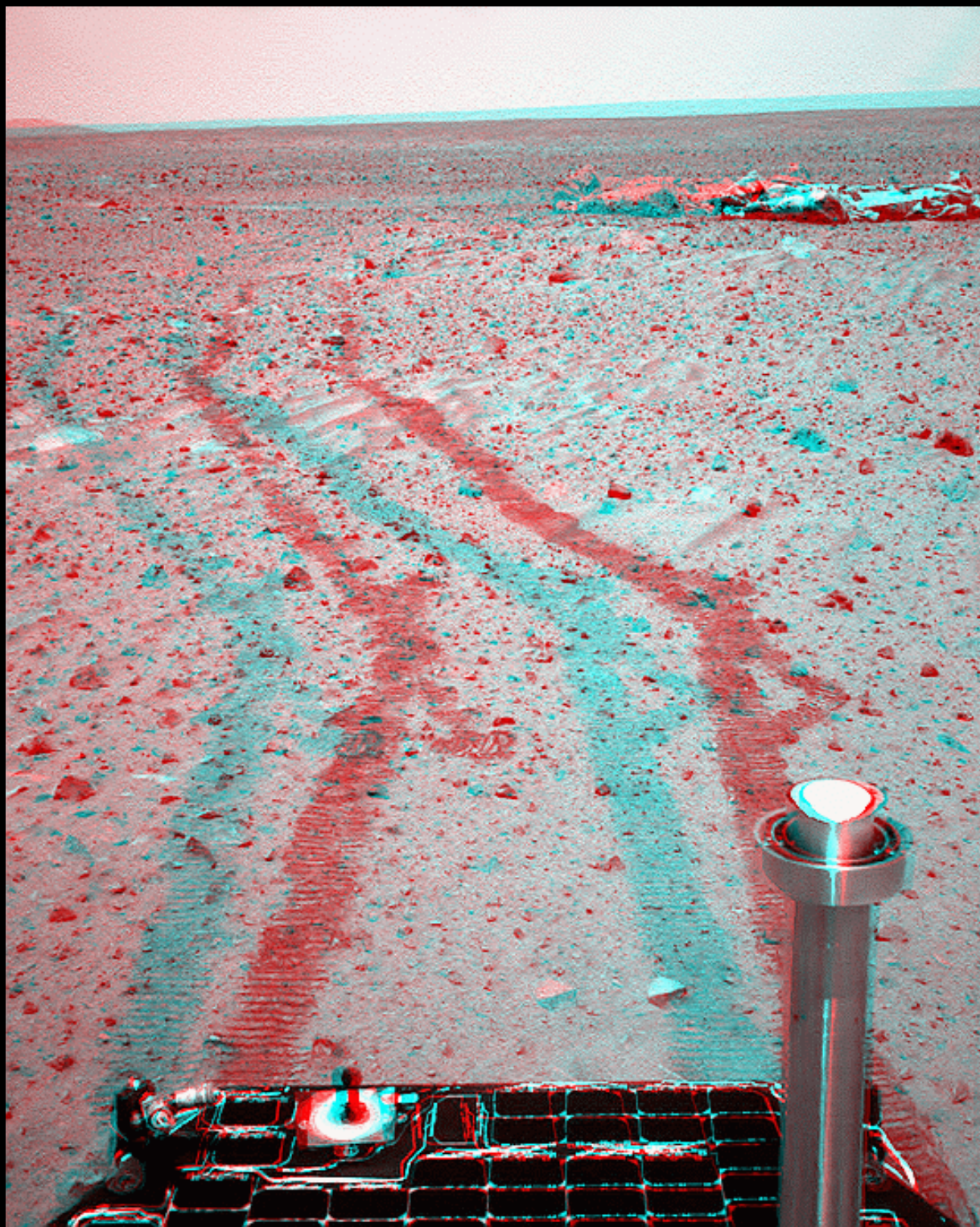
Mars: Spirit

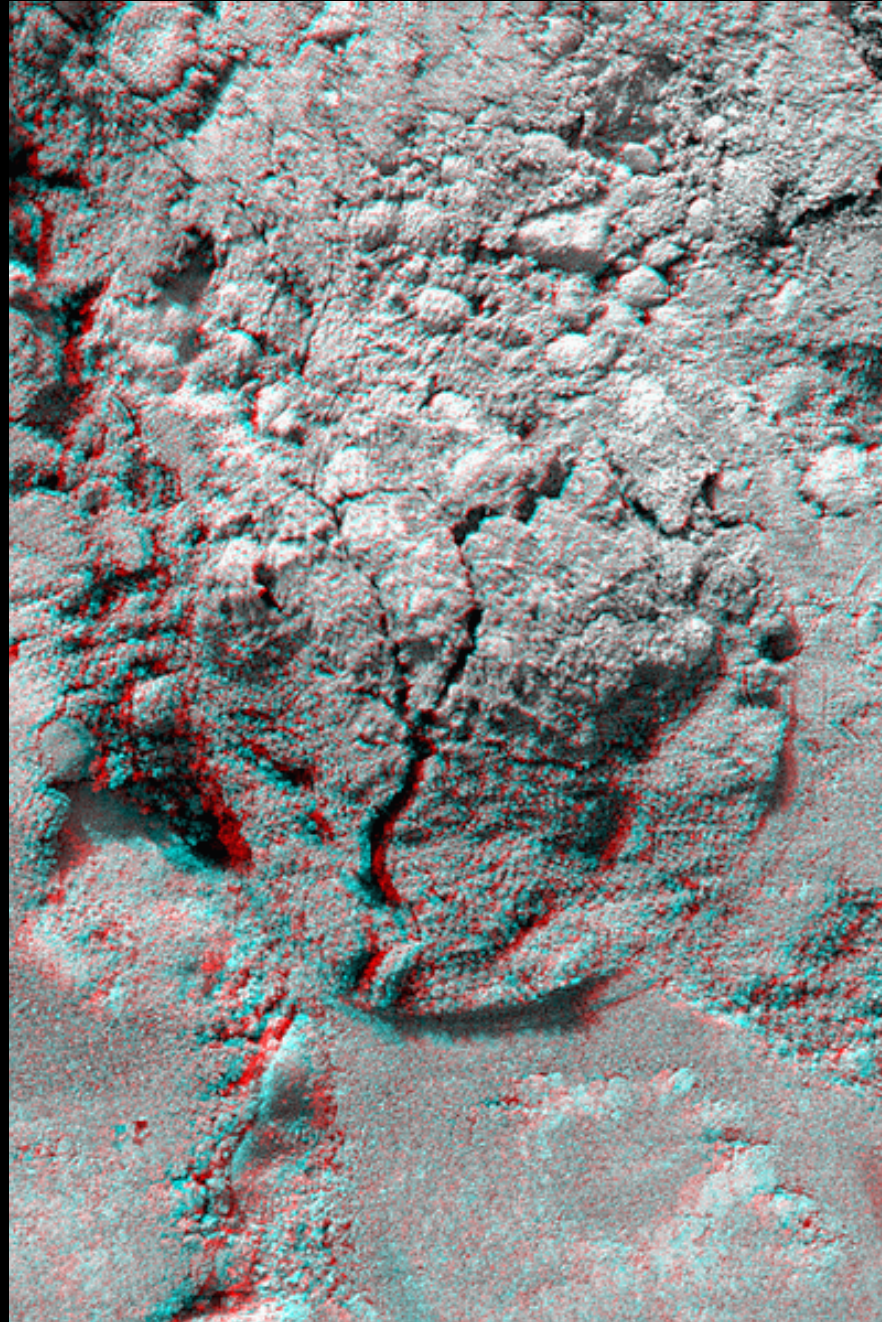


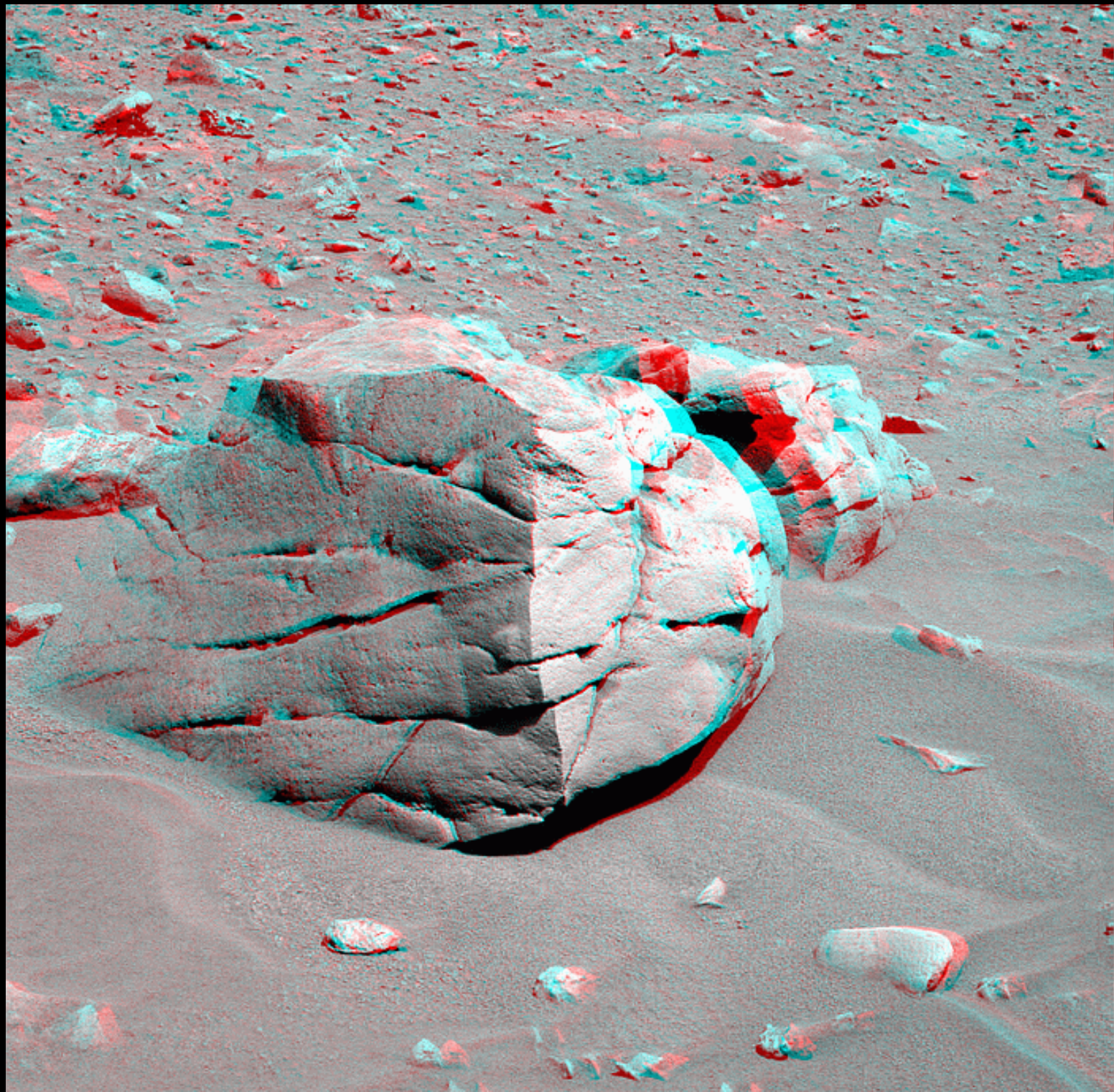


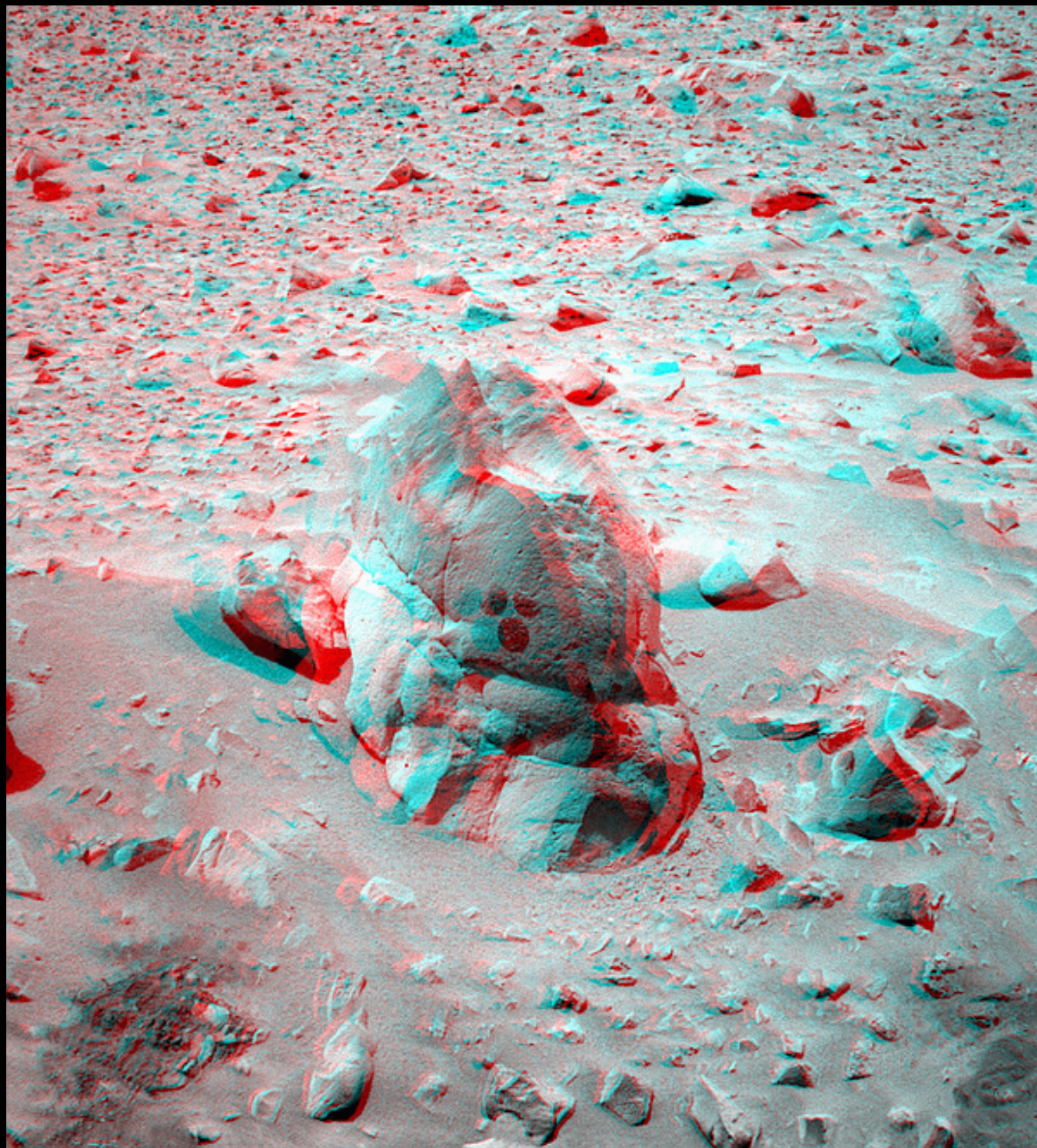
Mars: Spirit

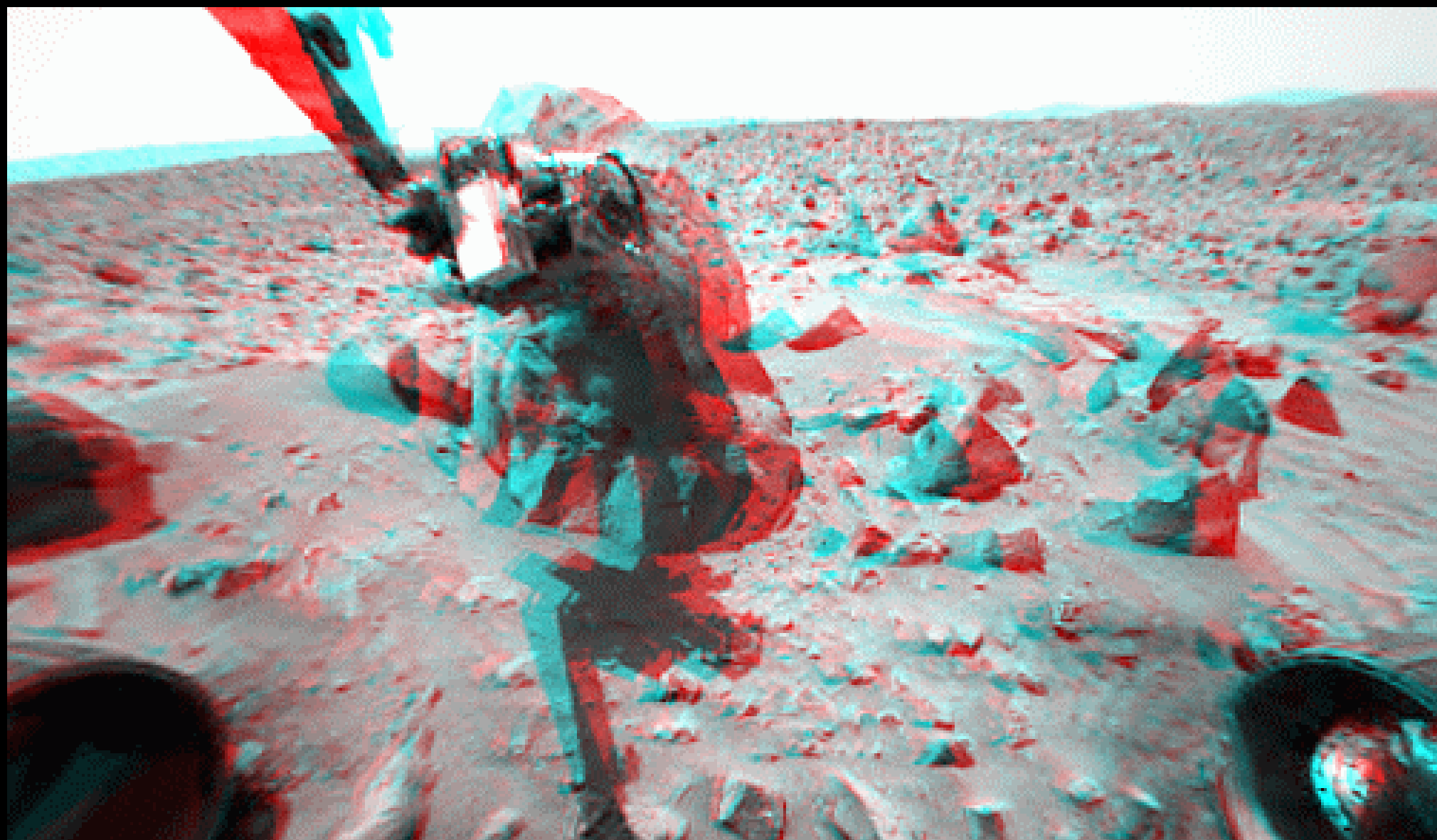


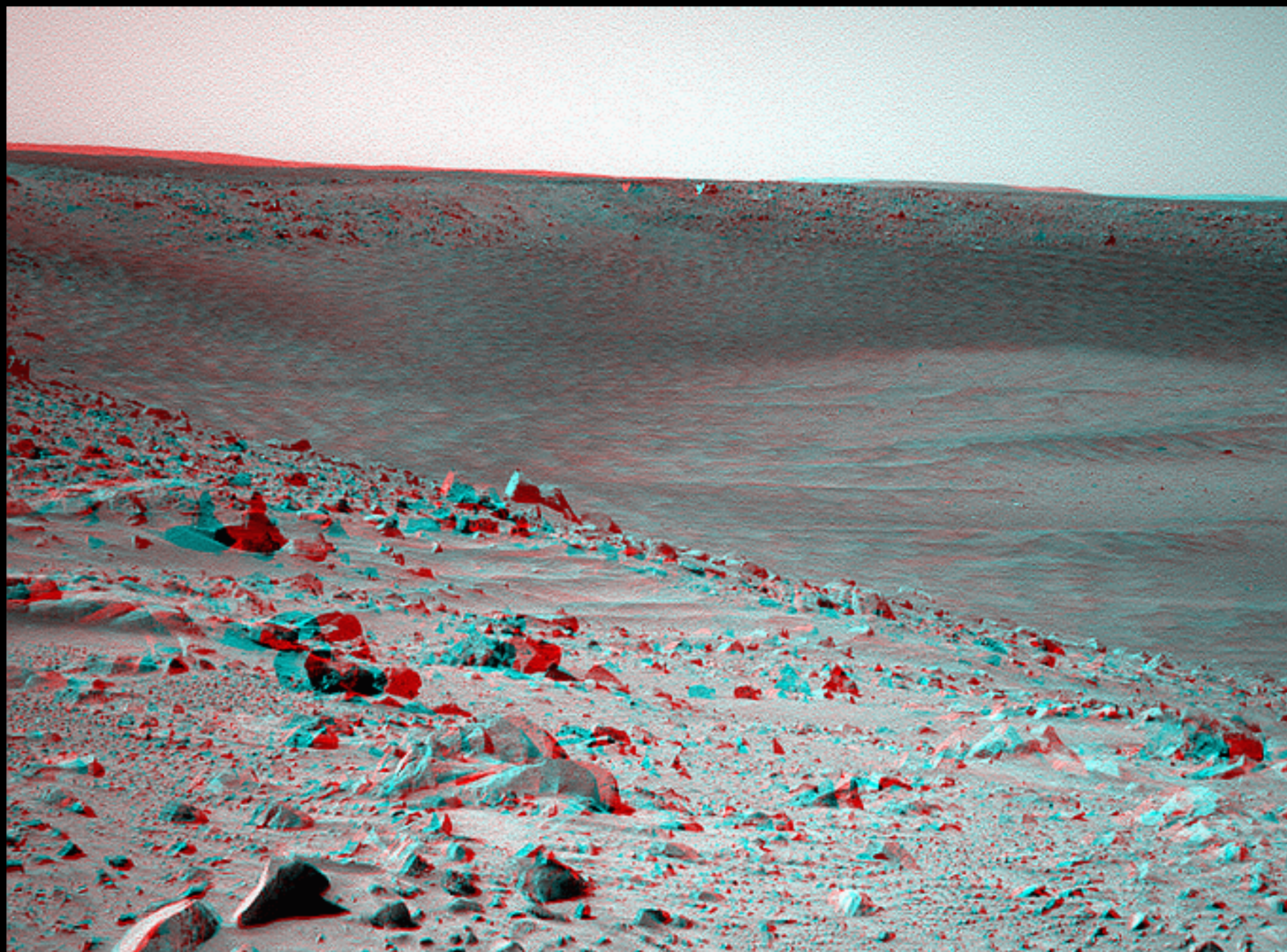


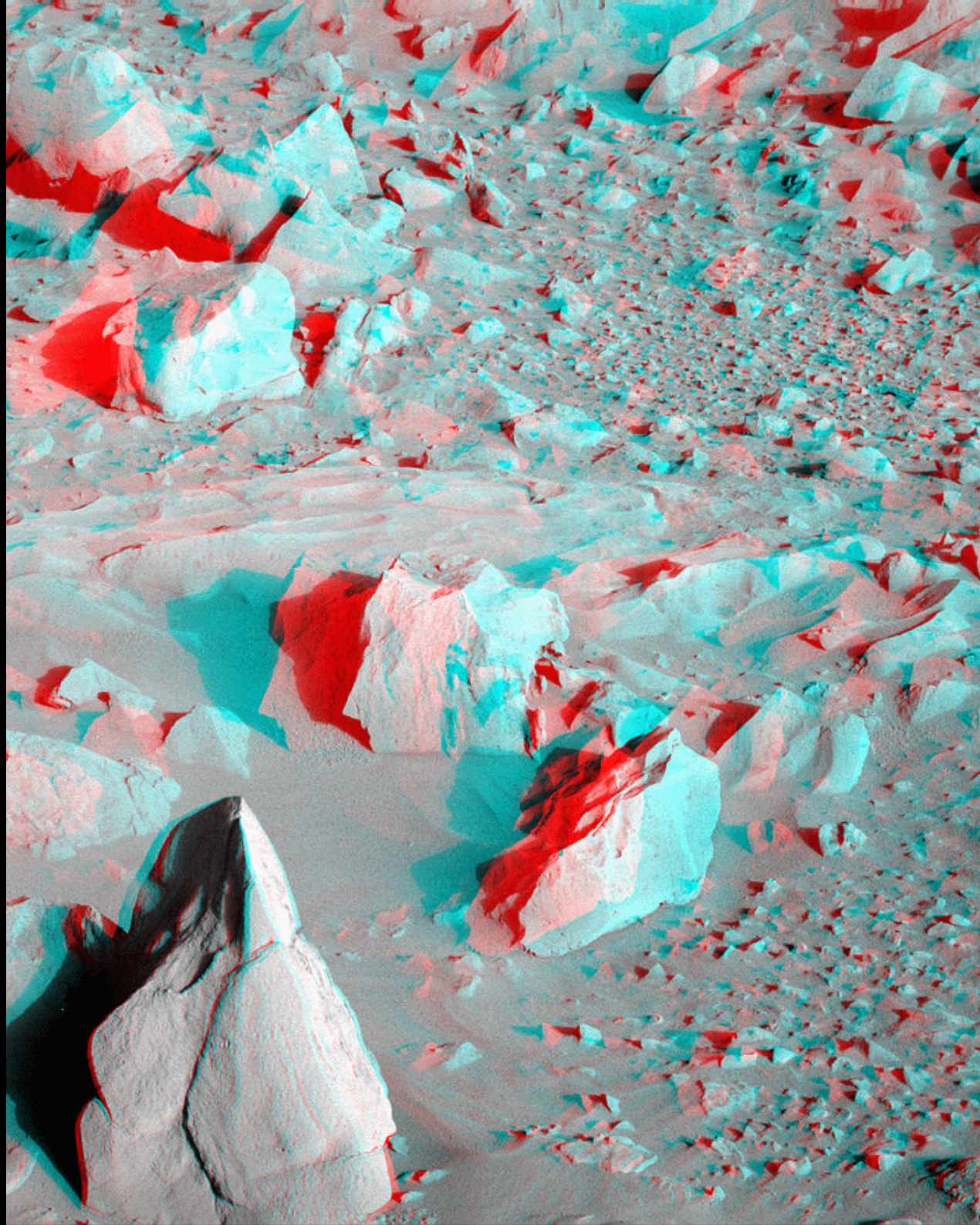


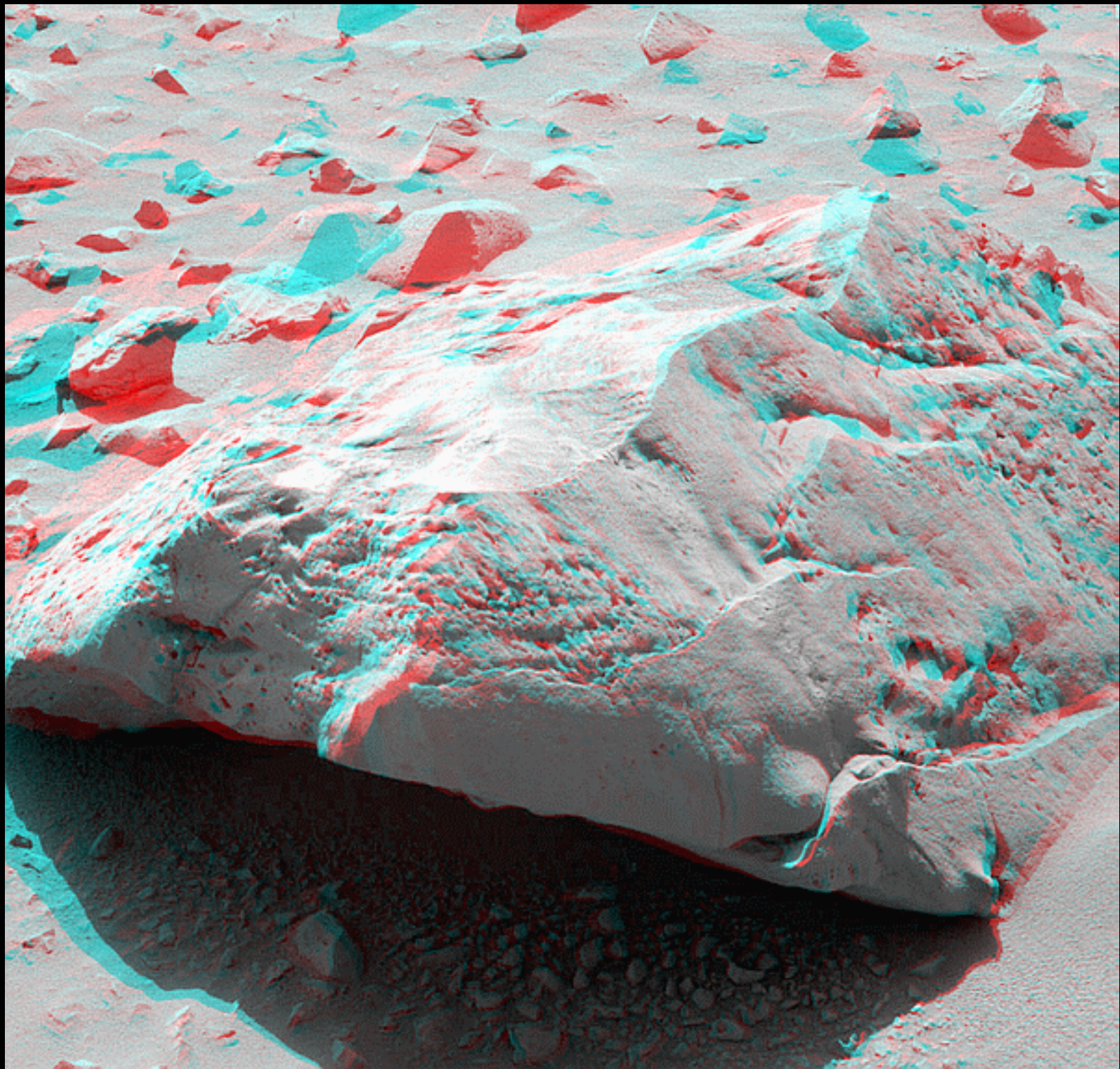


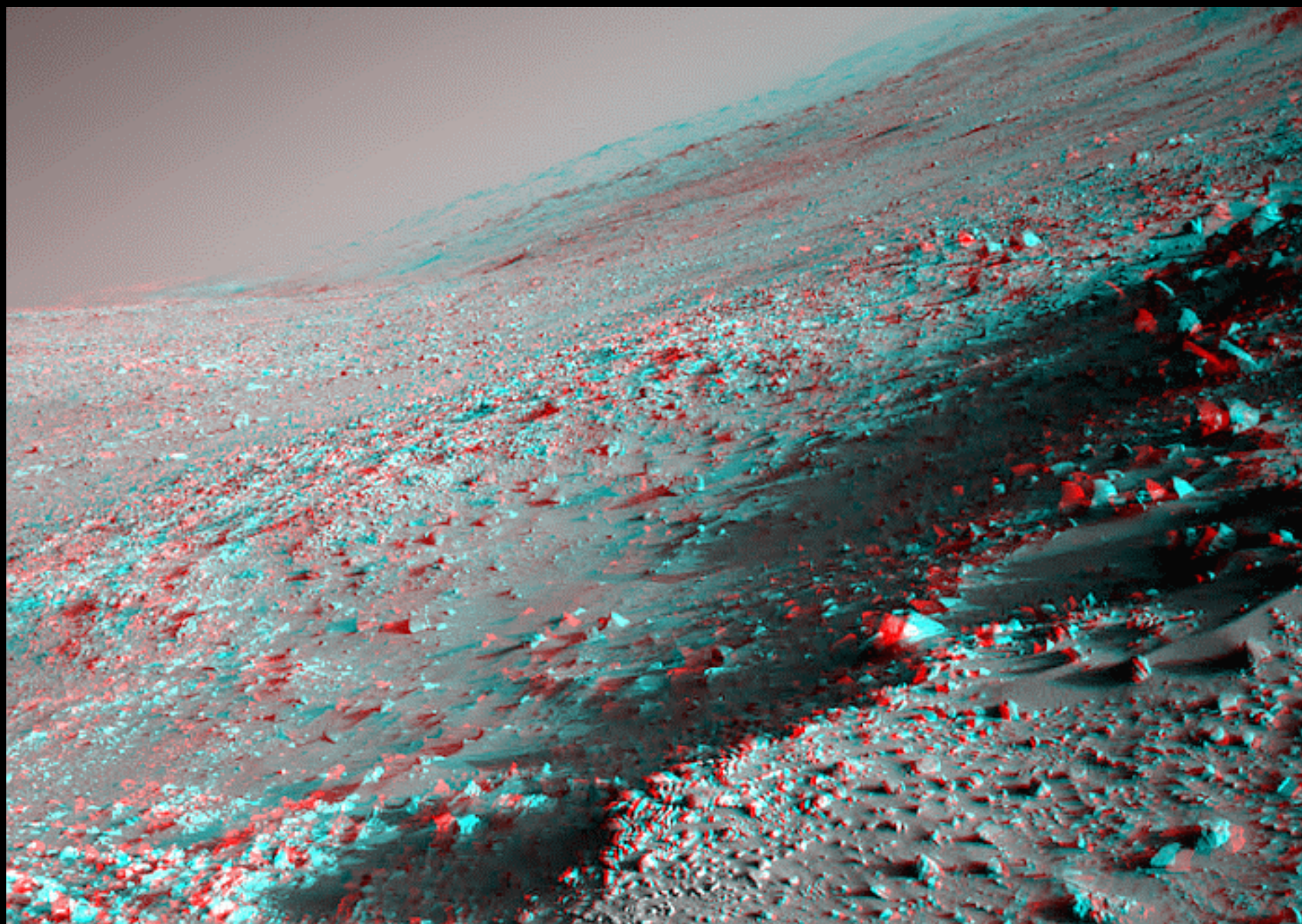


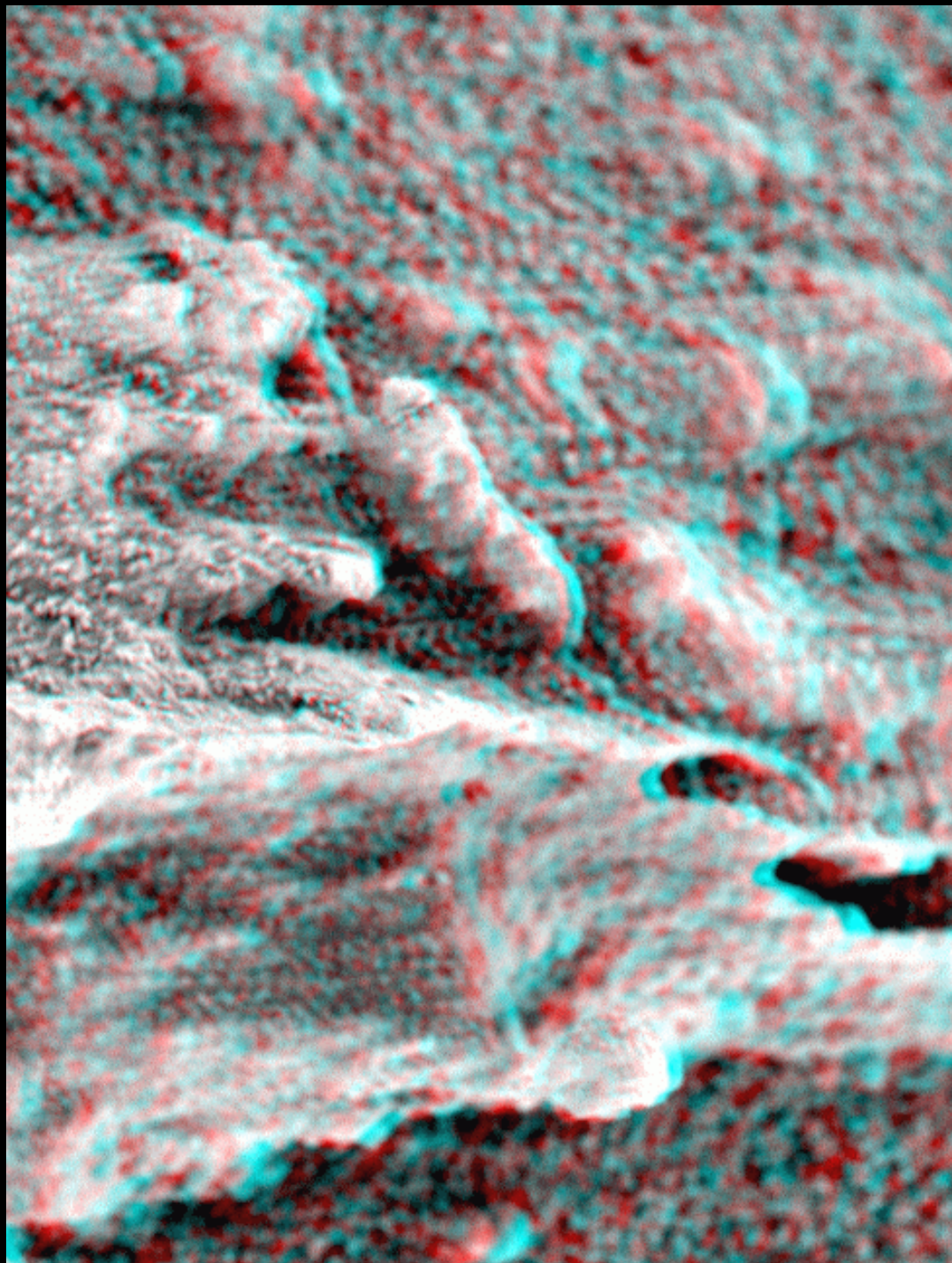


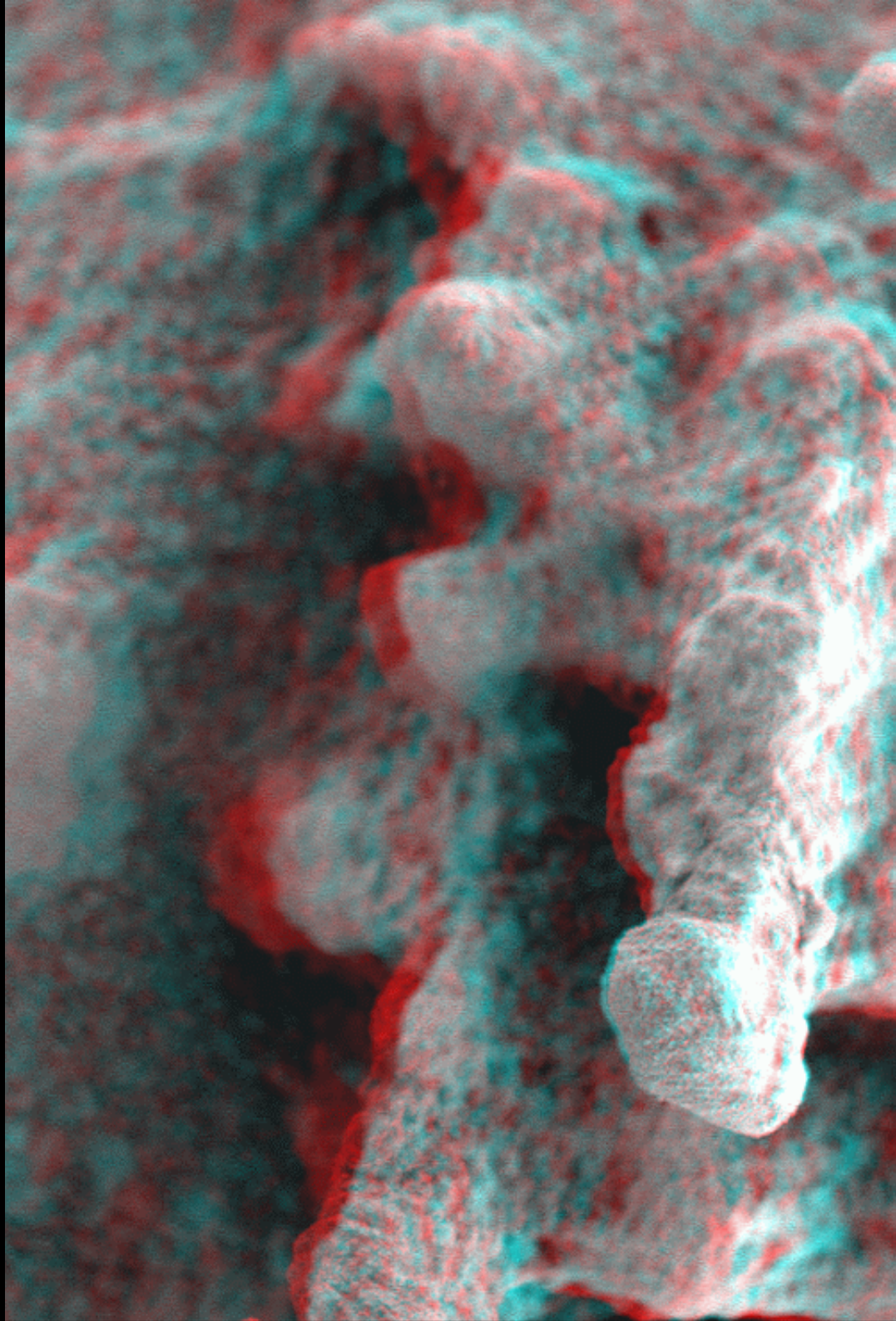


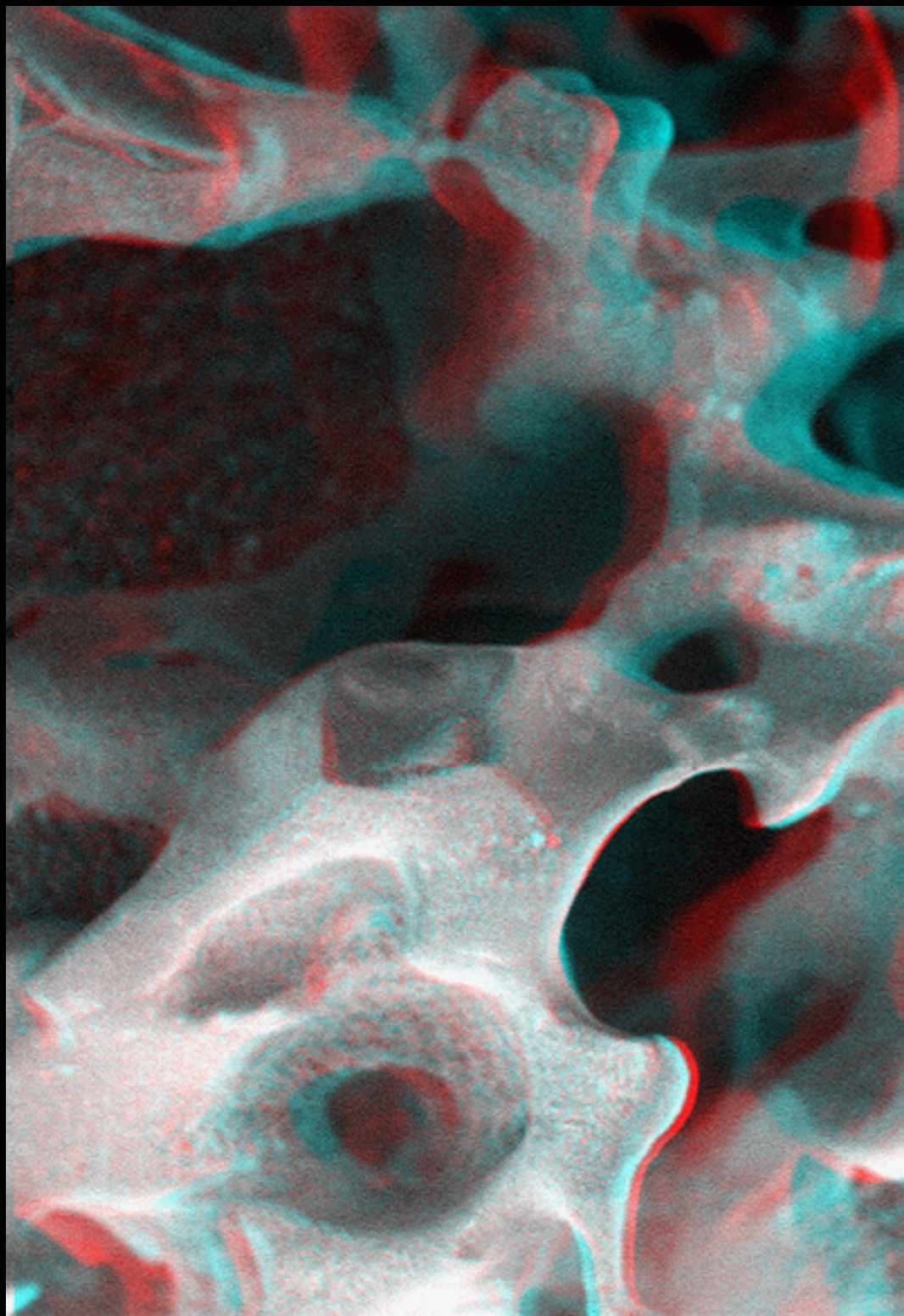


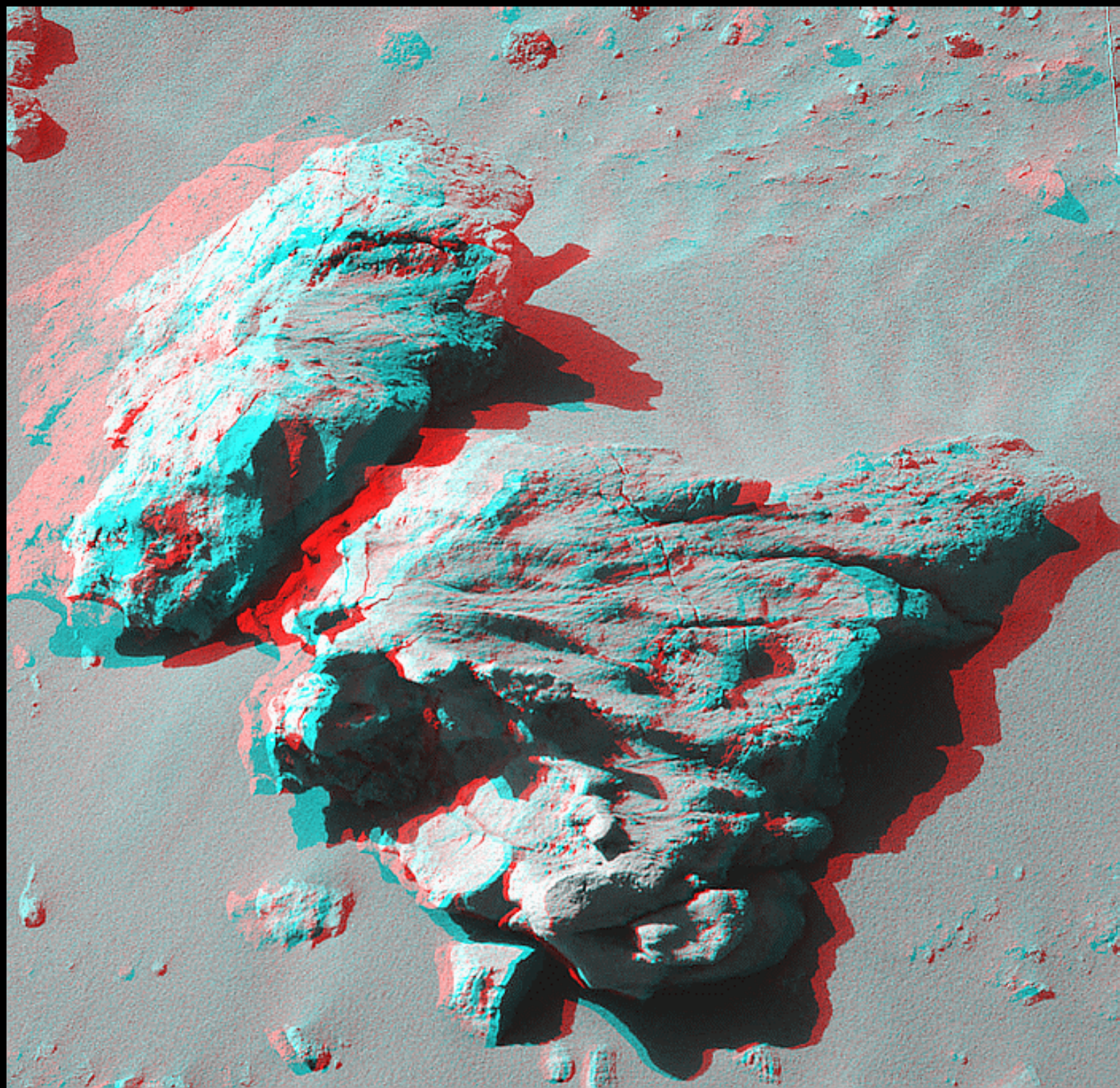


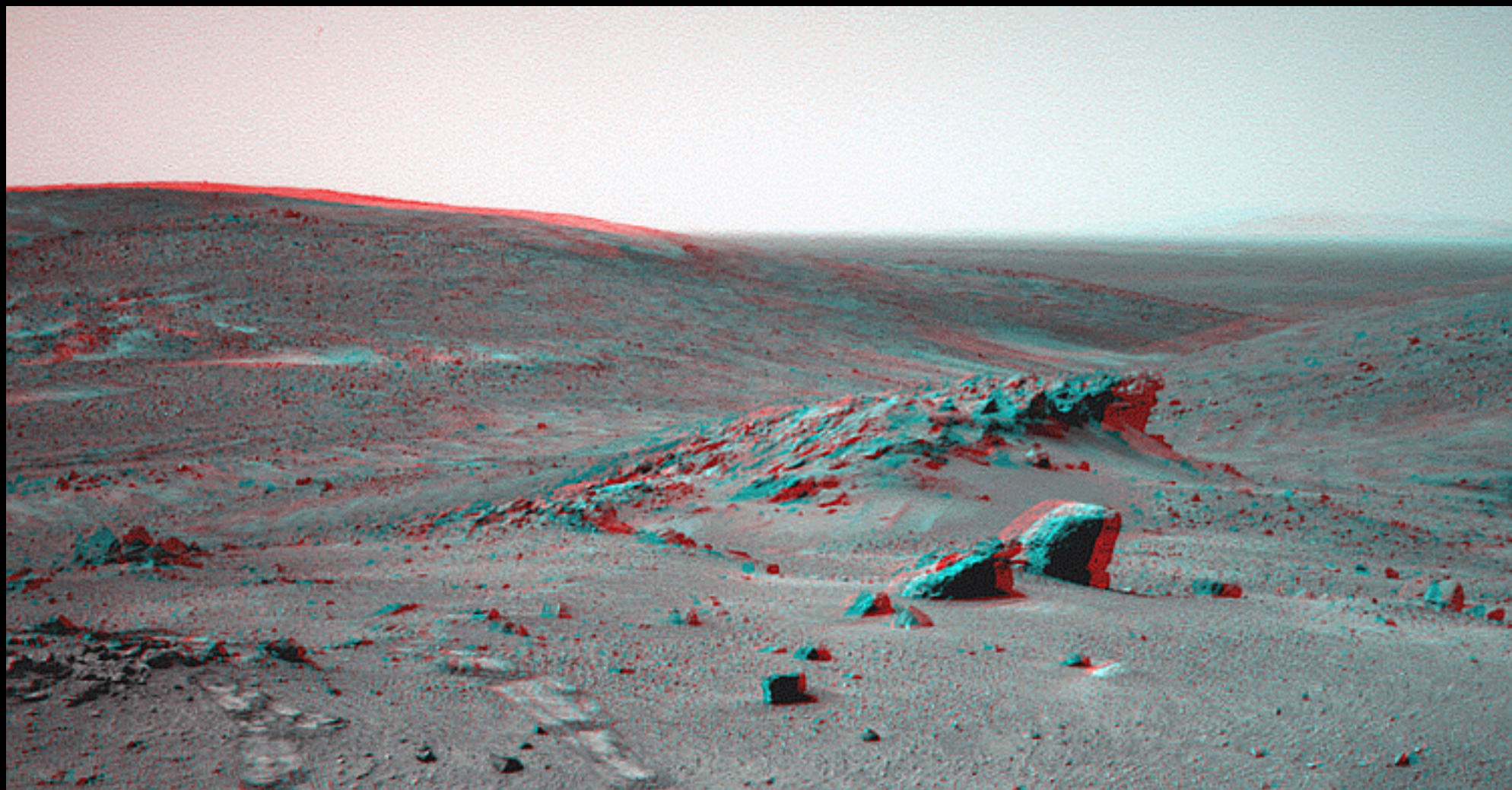


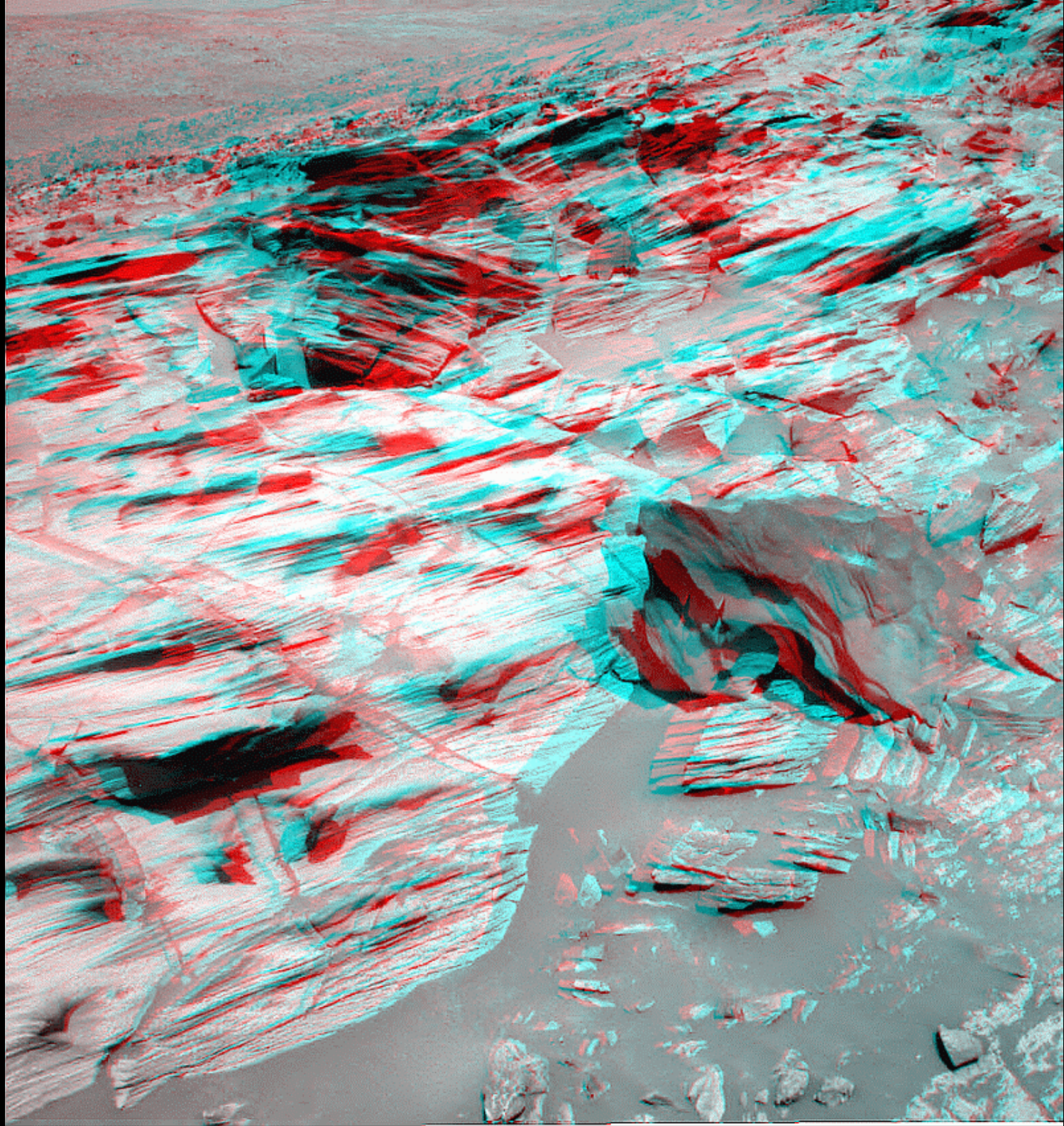


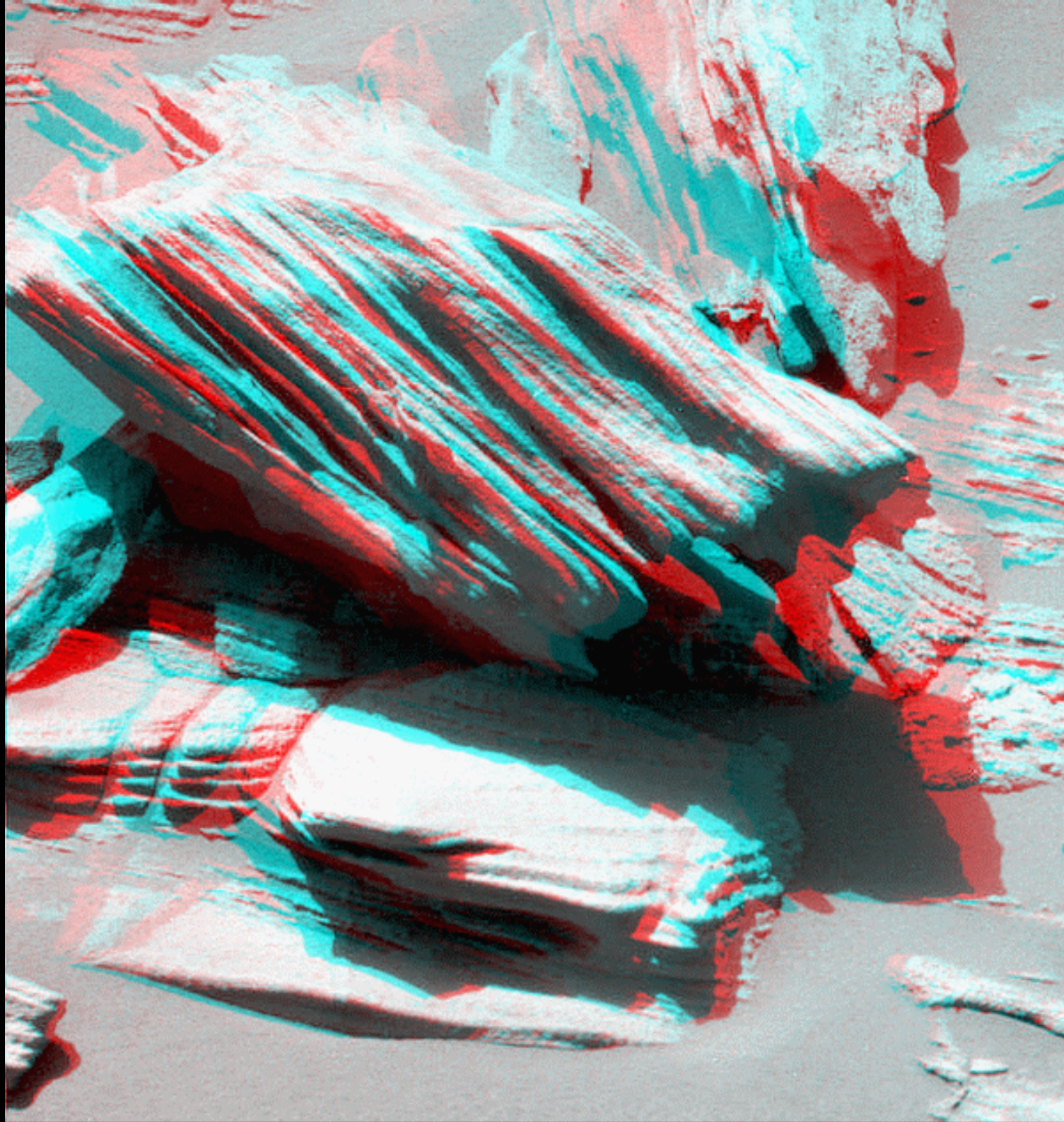




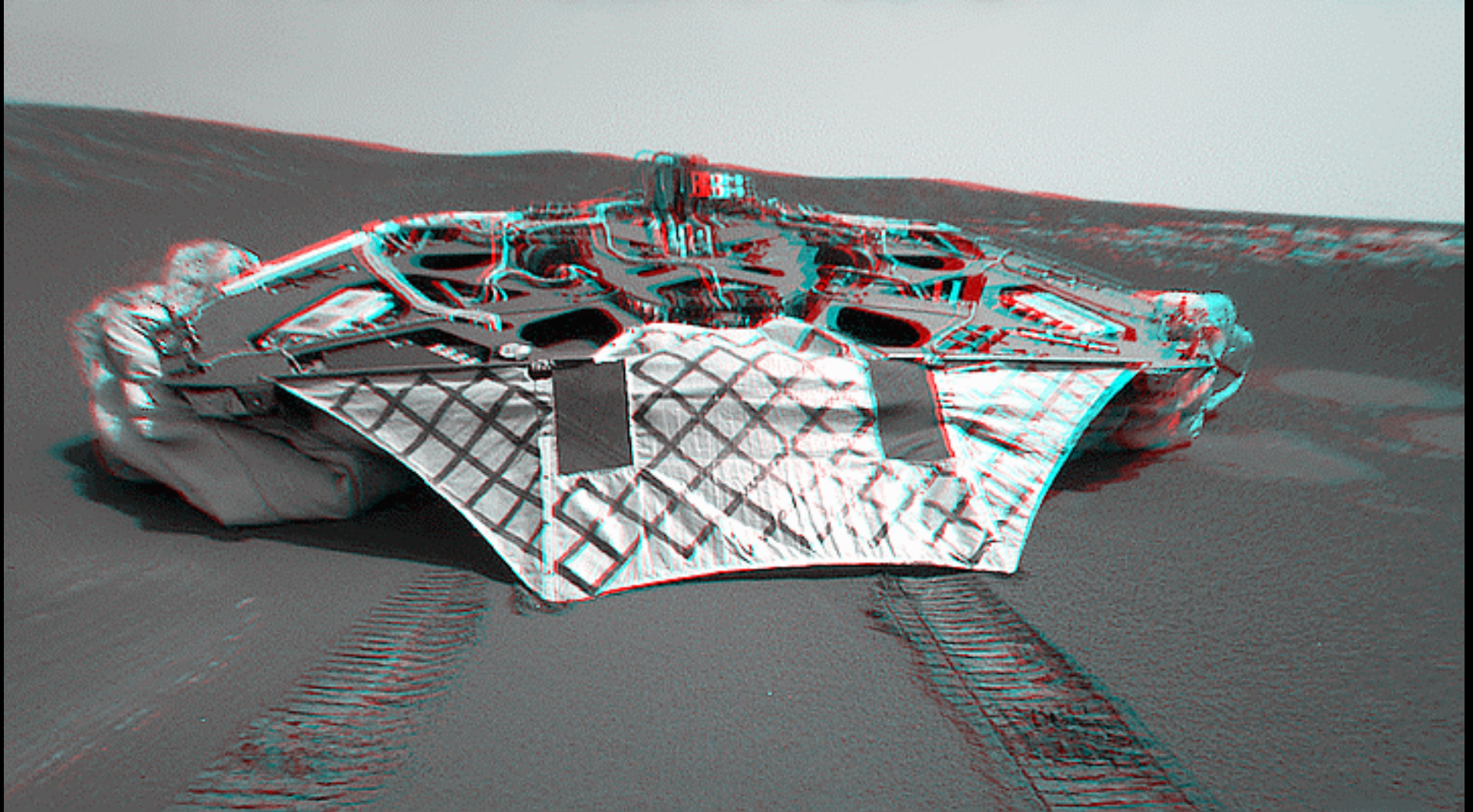


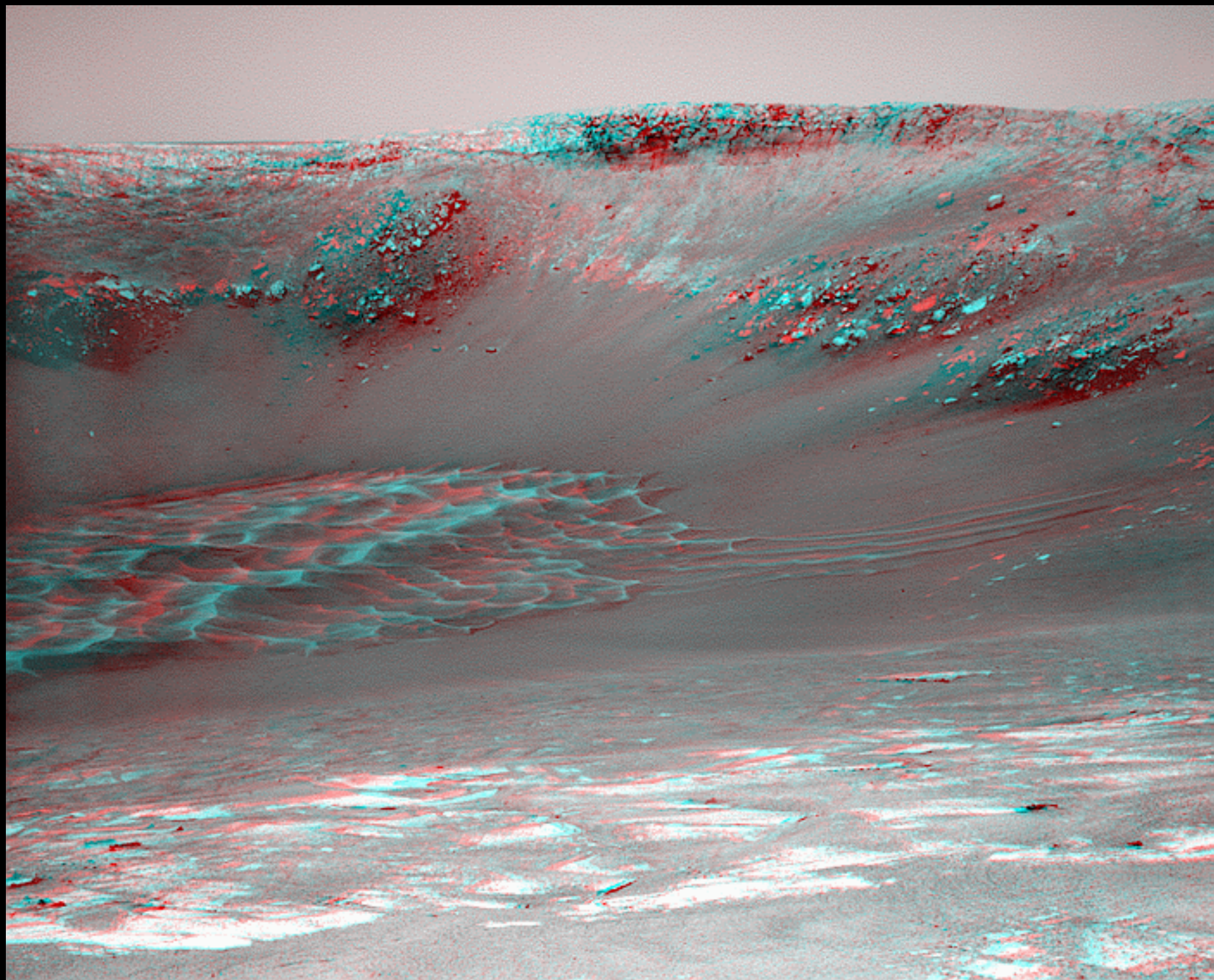


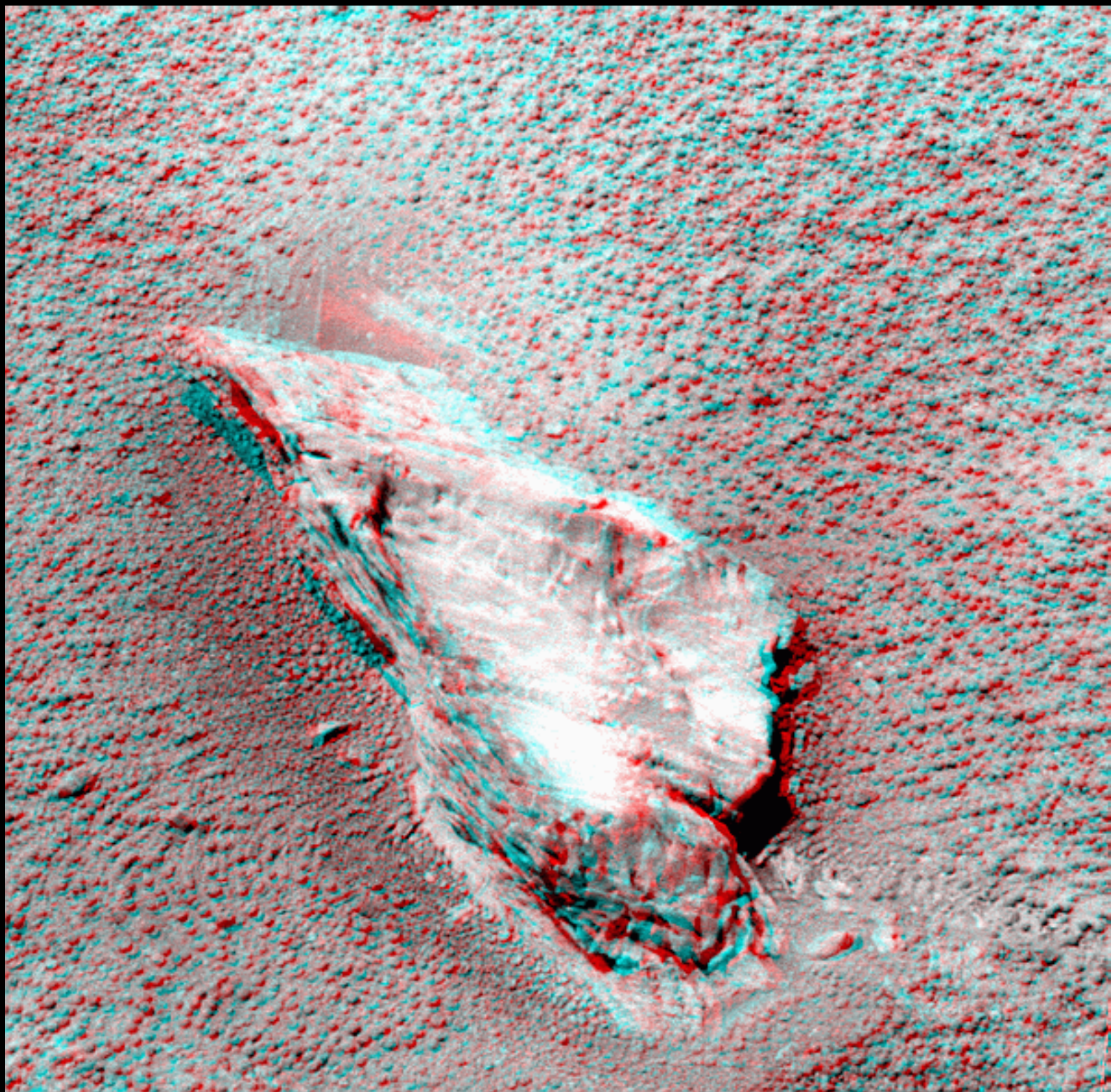


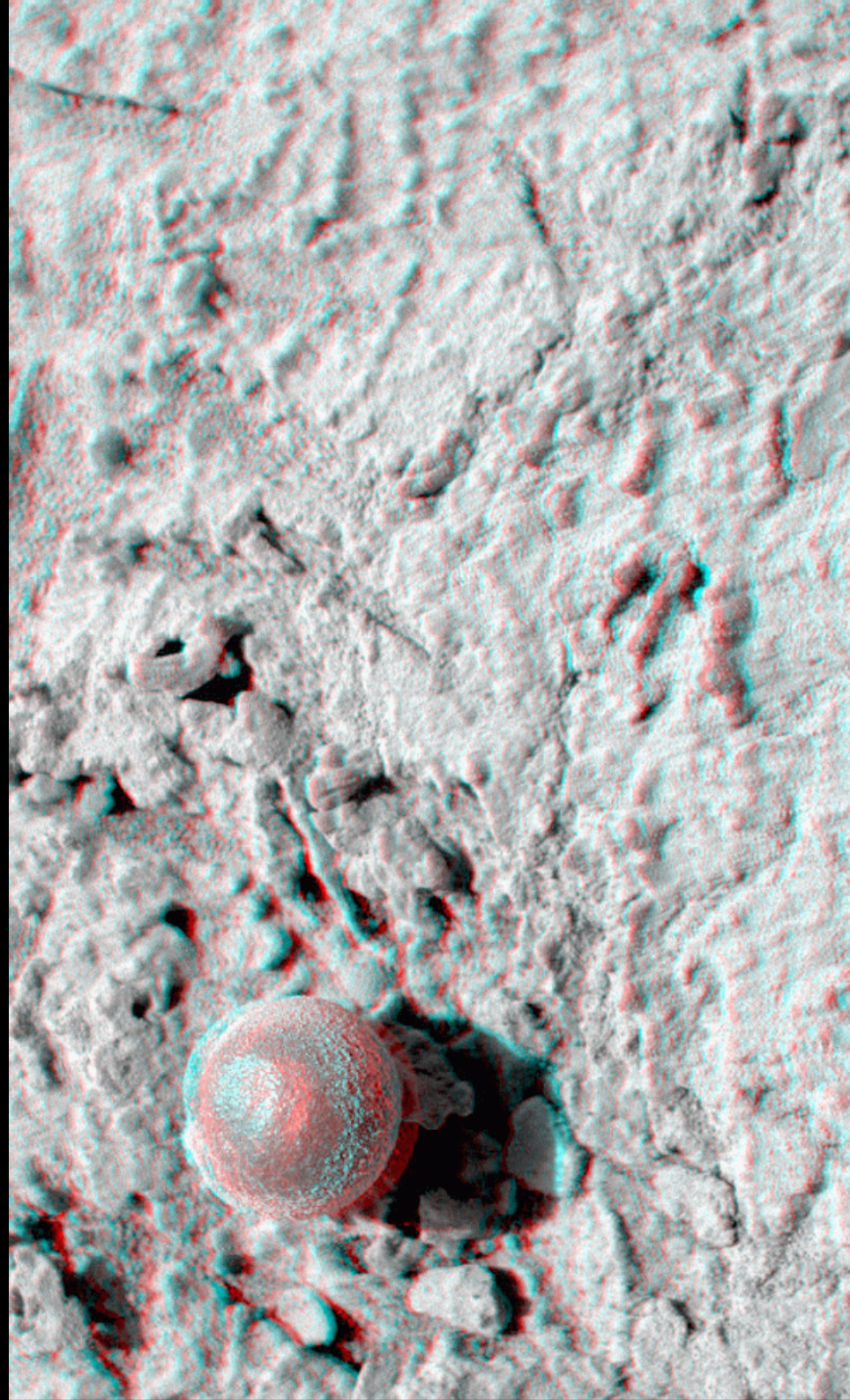
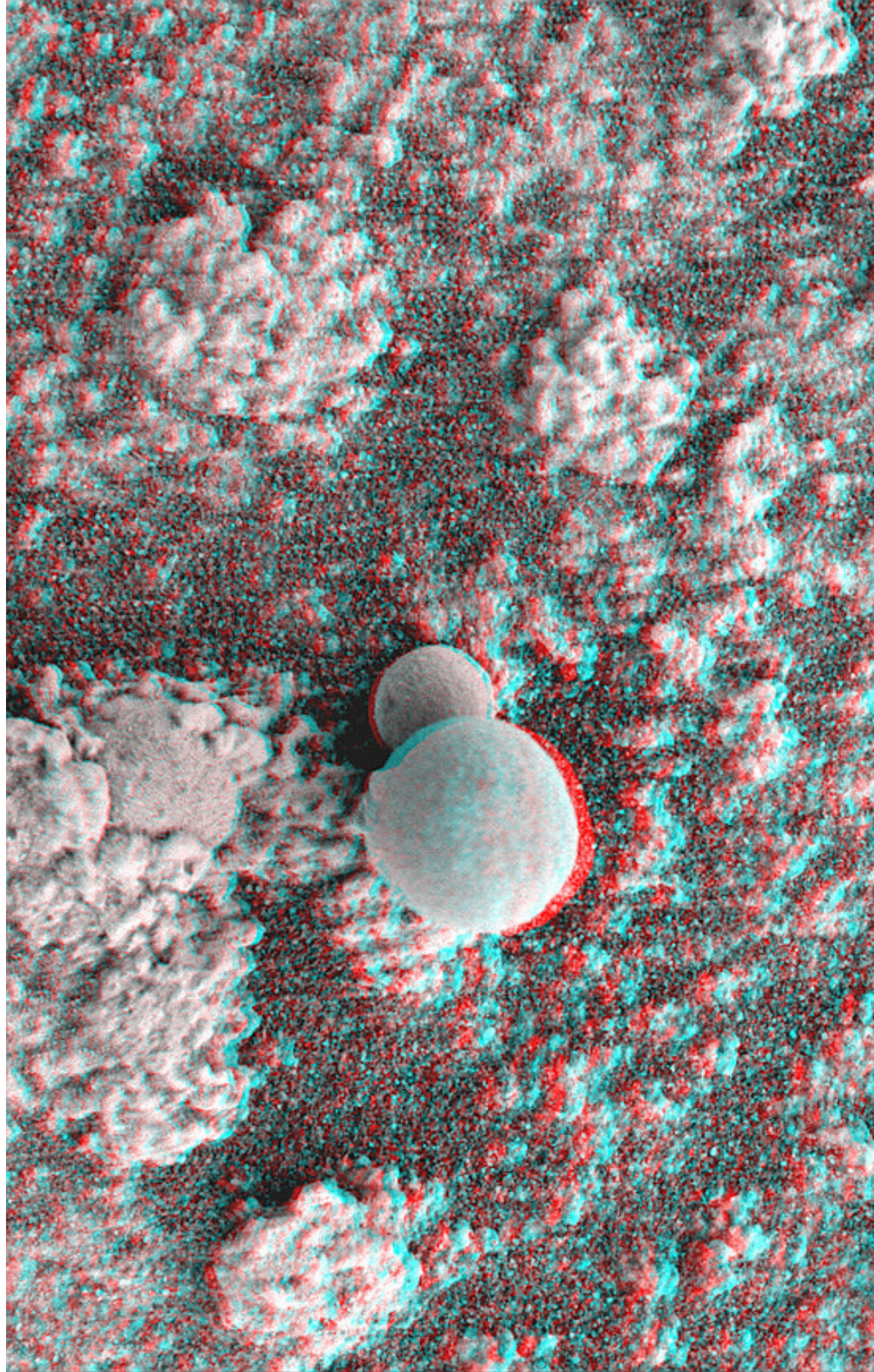


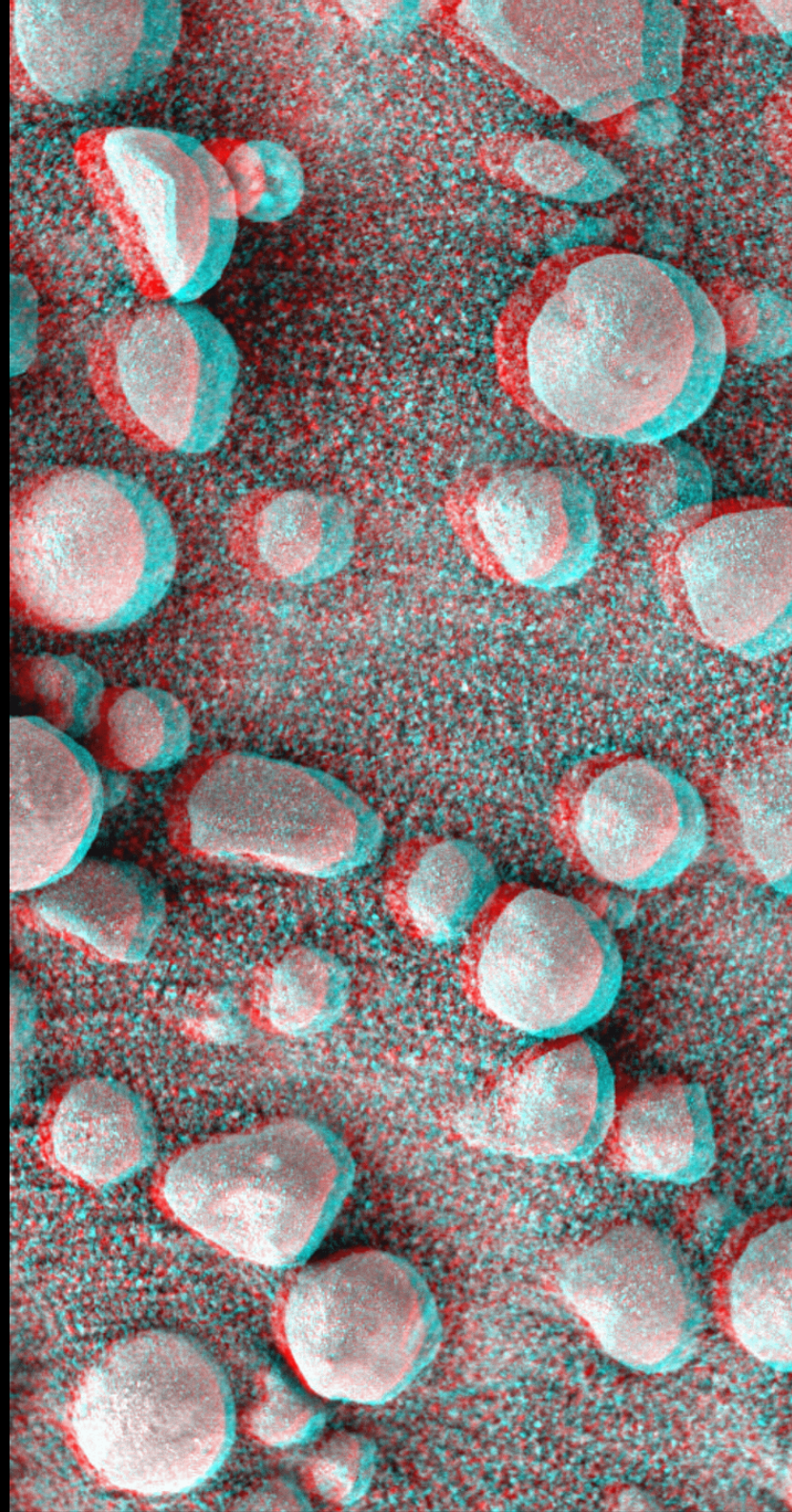
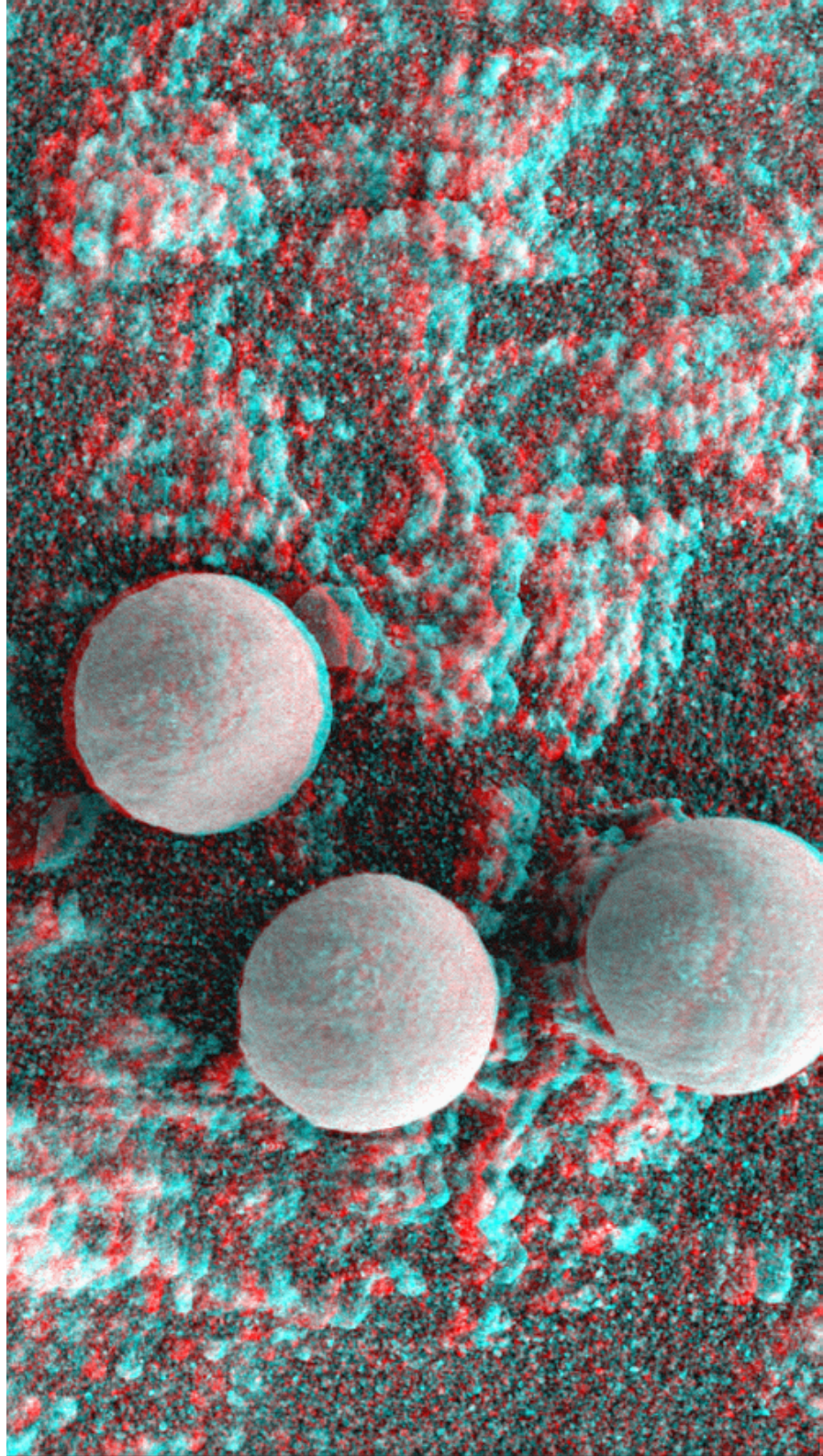
Mars: Opportunity

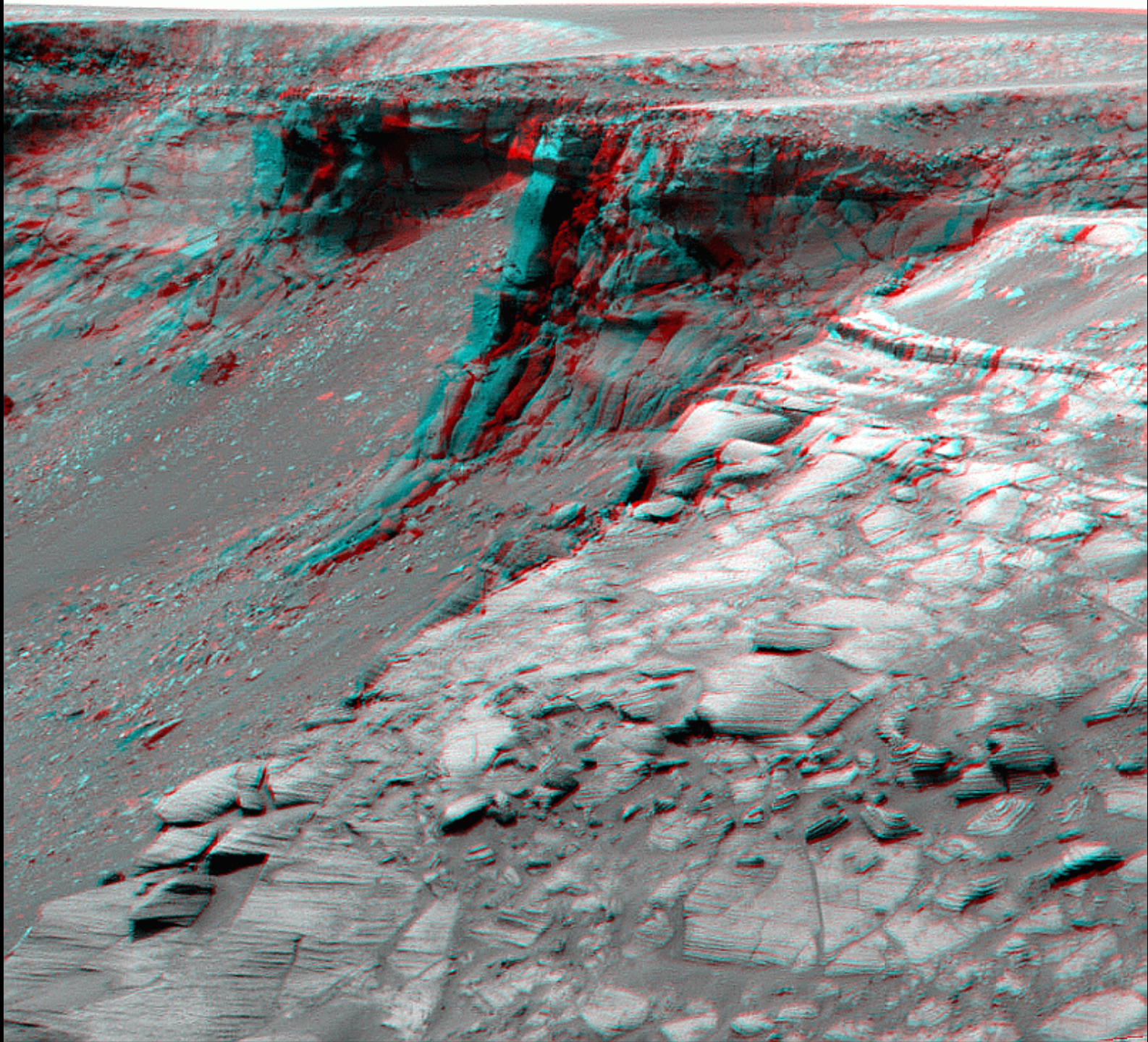


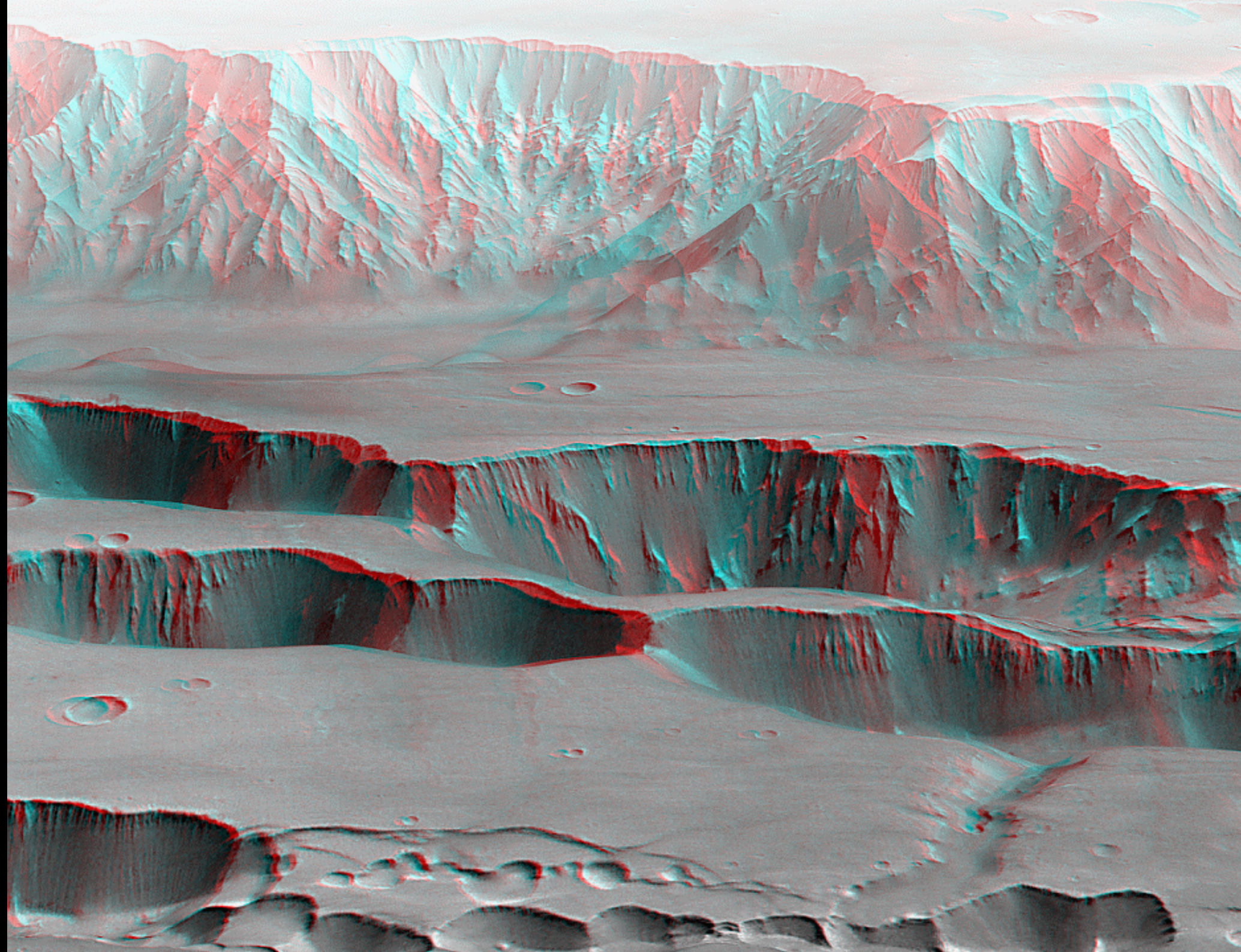




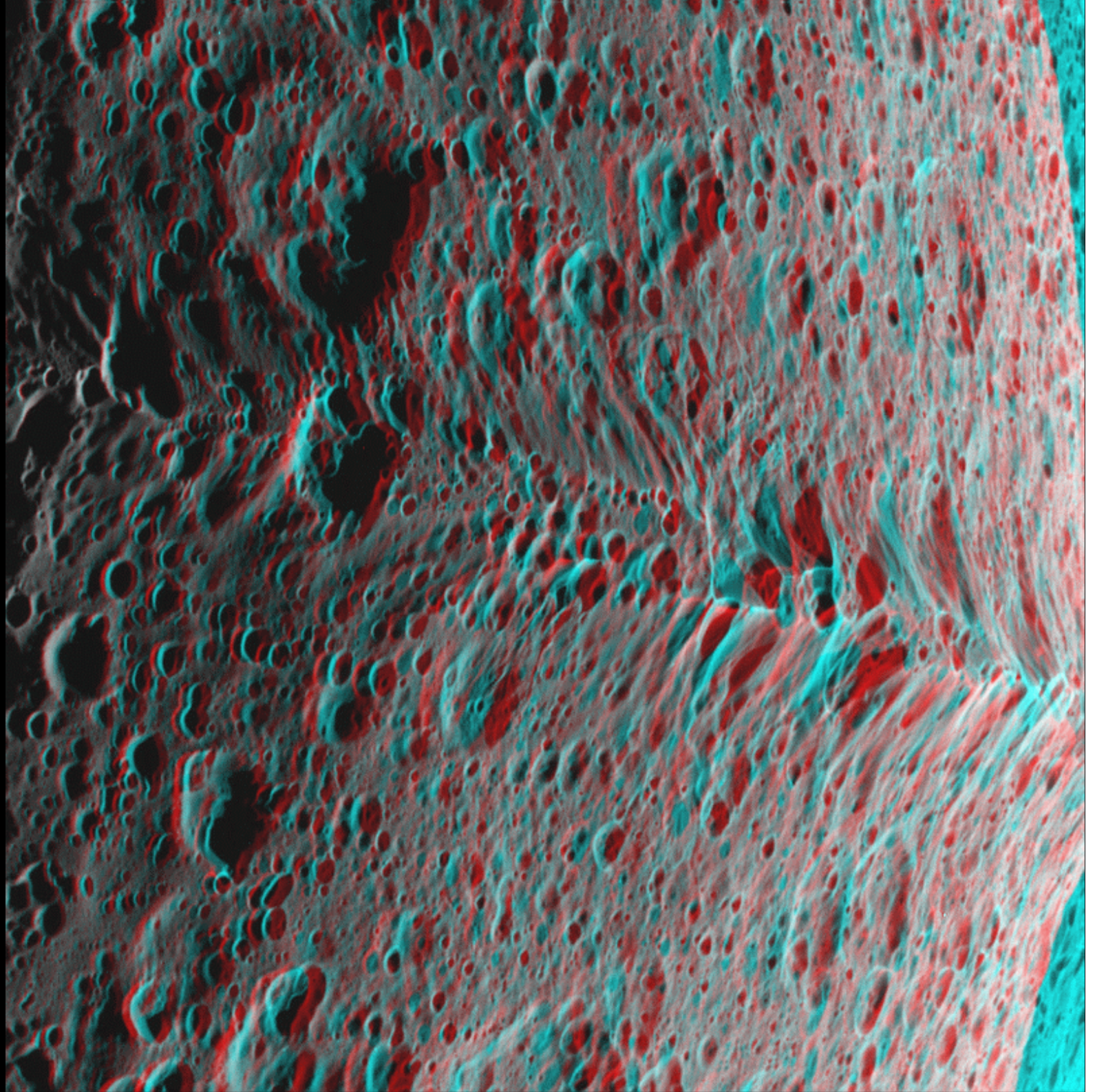




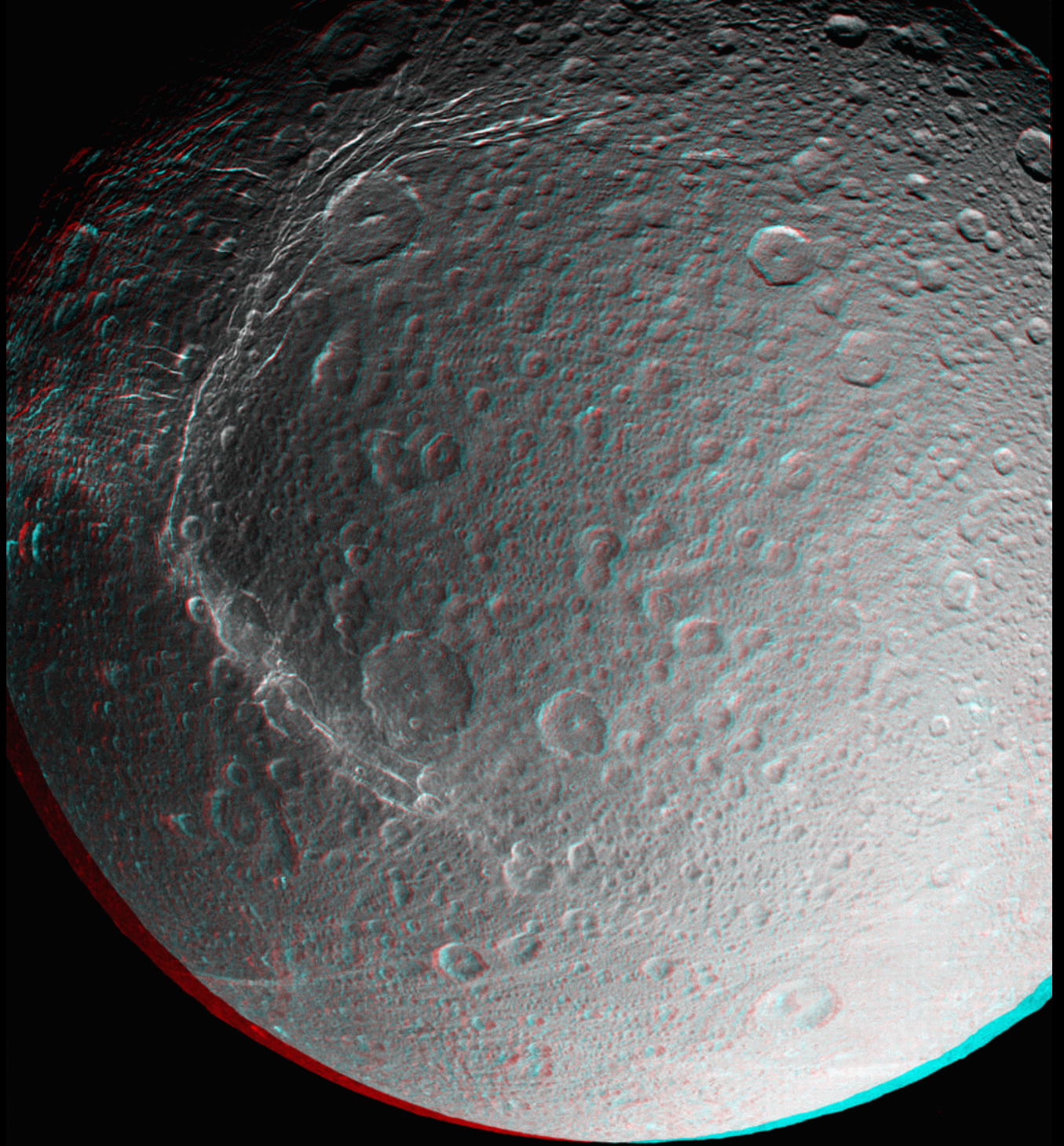




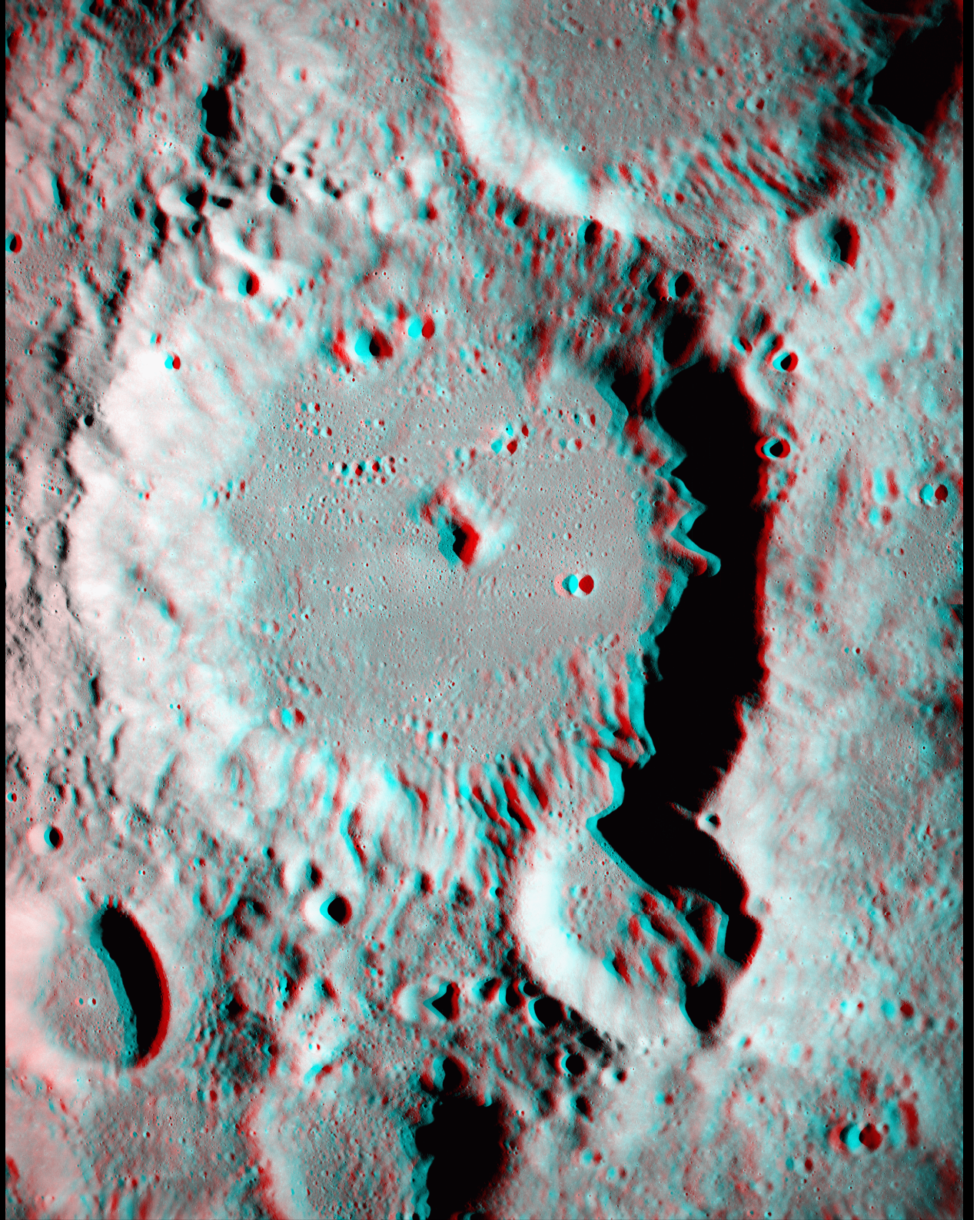
Iapetus



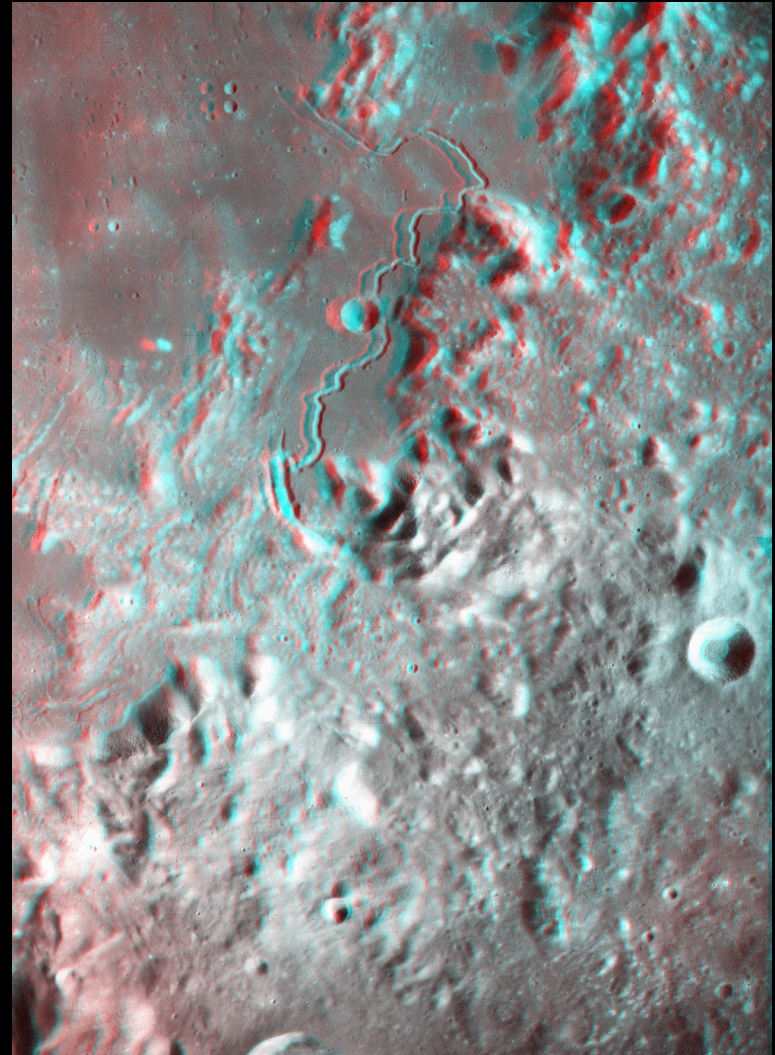
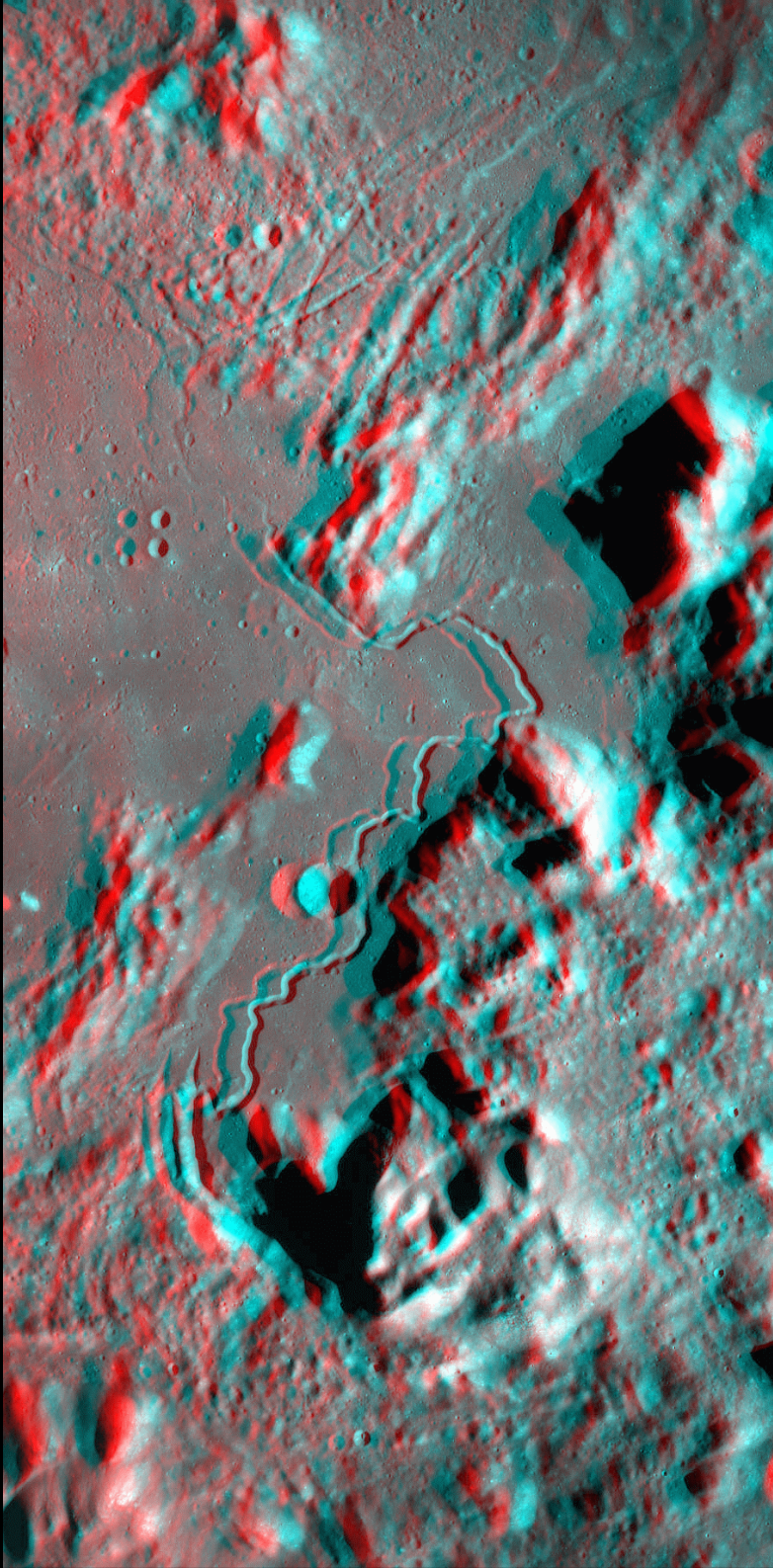
Dione

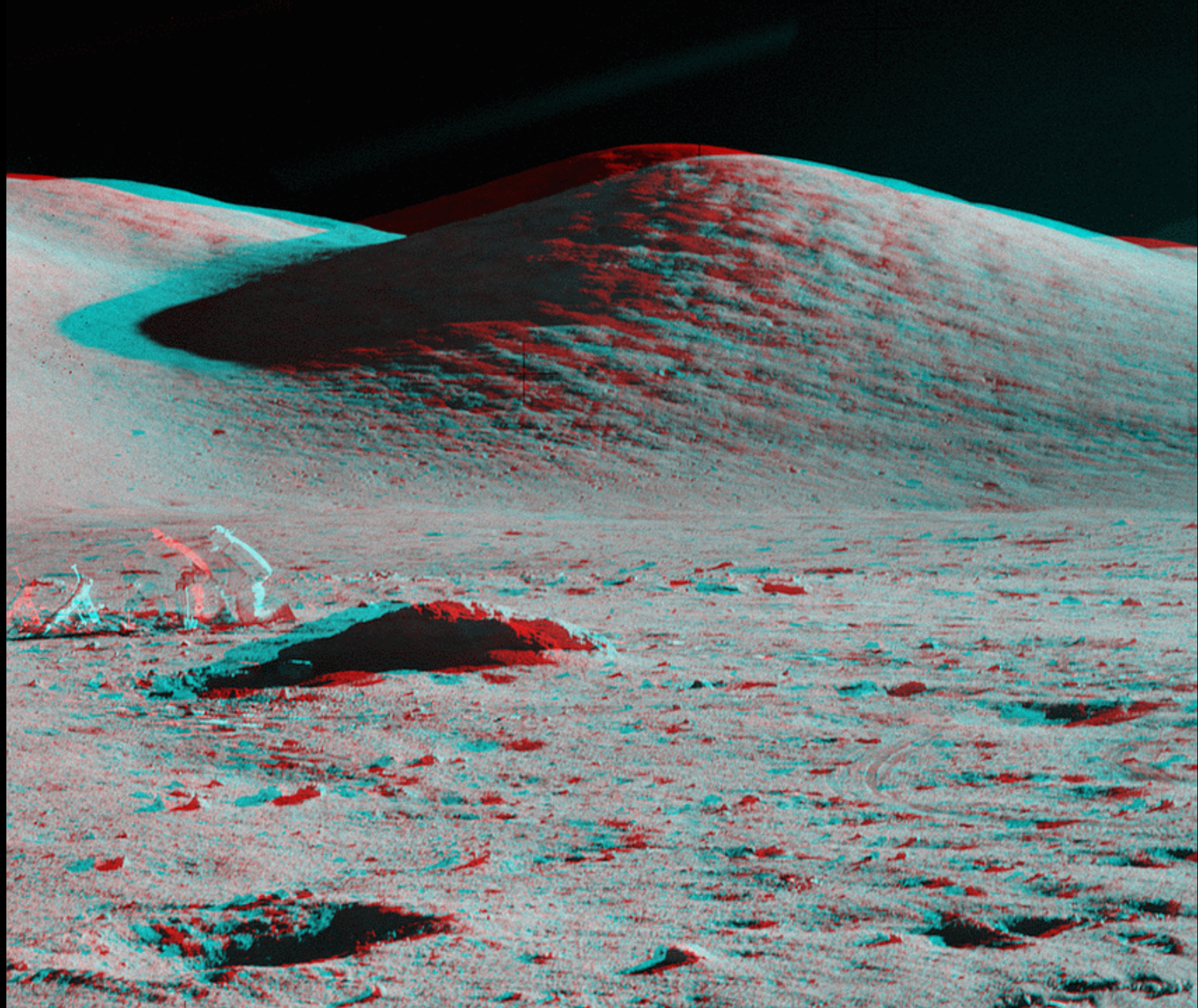


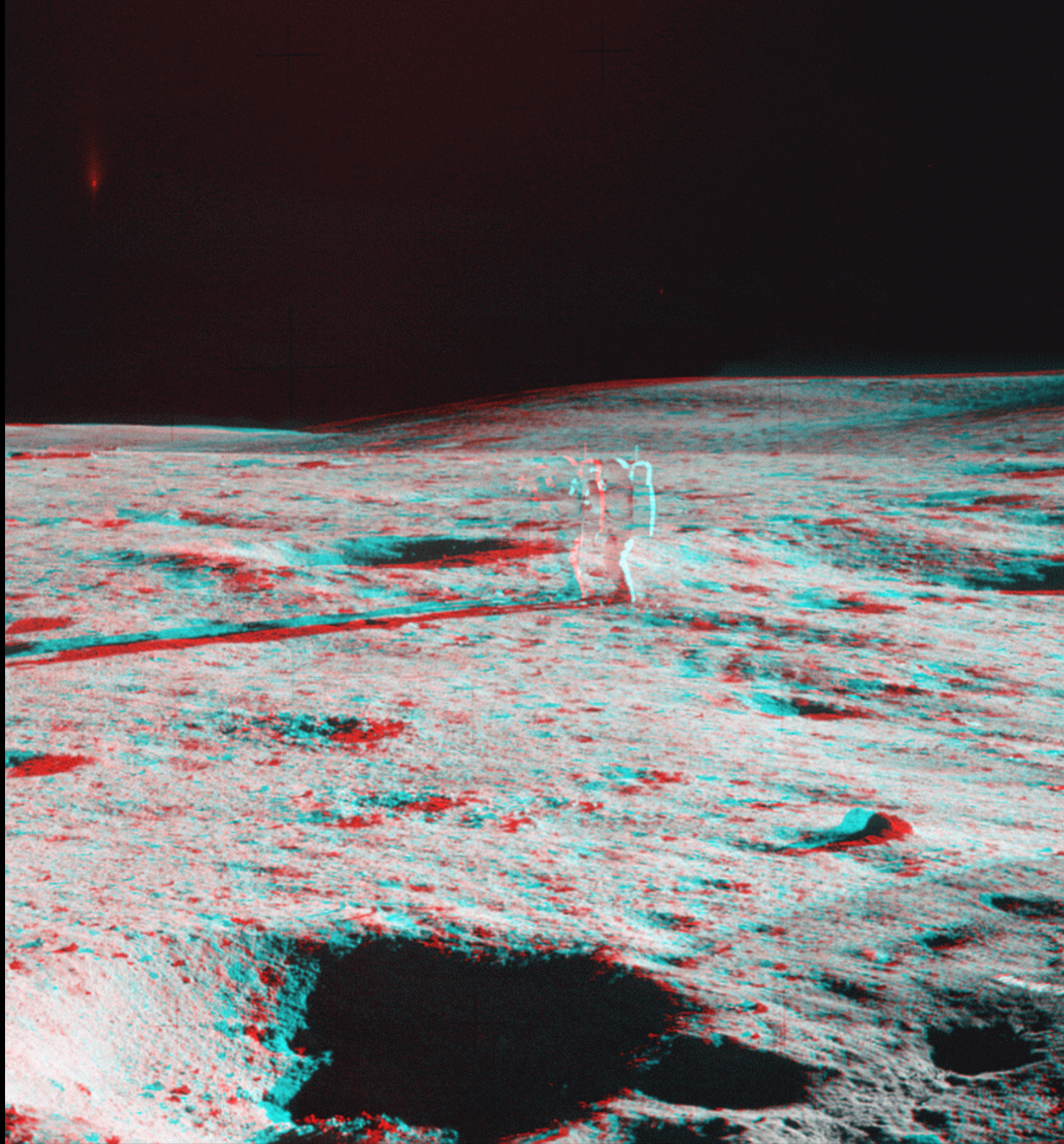
Paracelsus

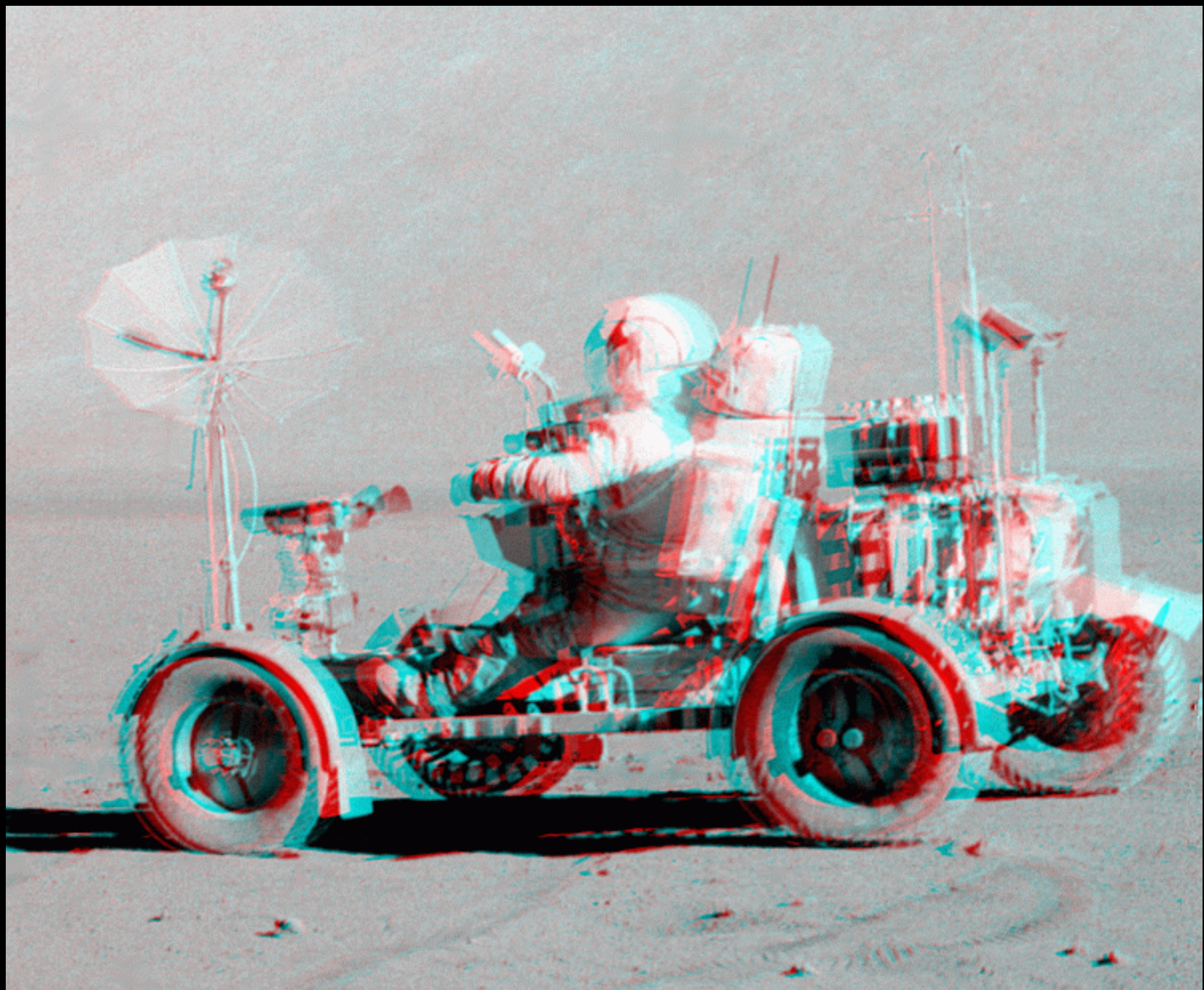


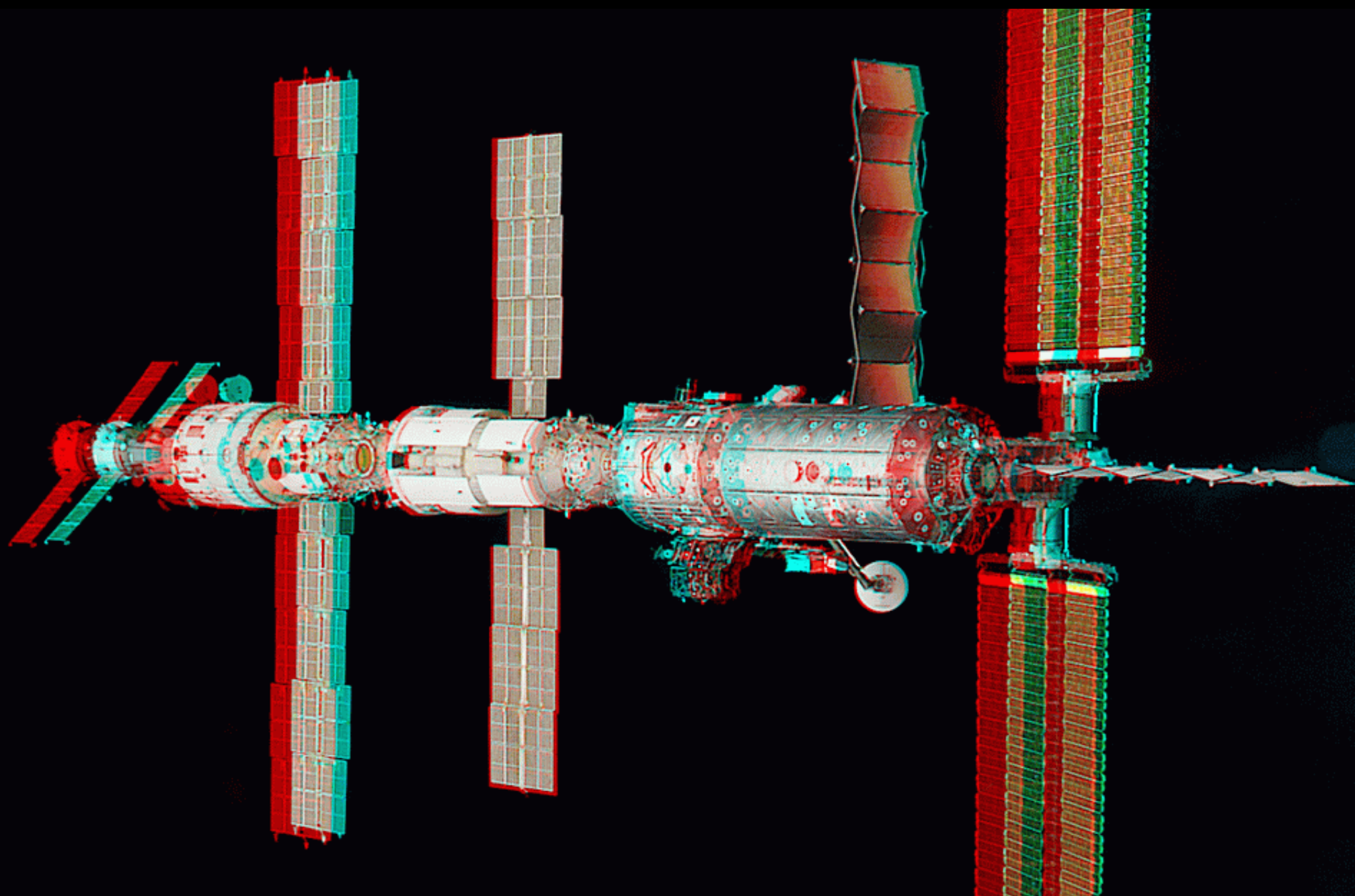
Hadley Delta



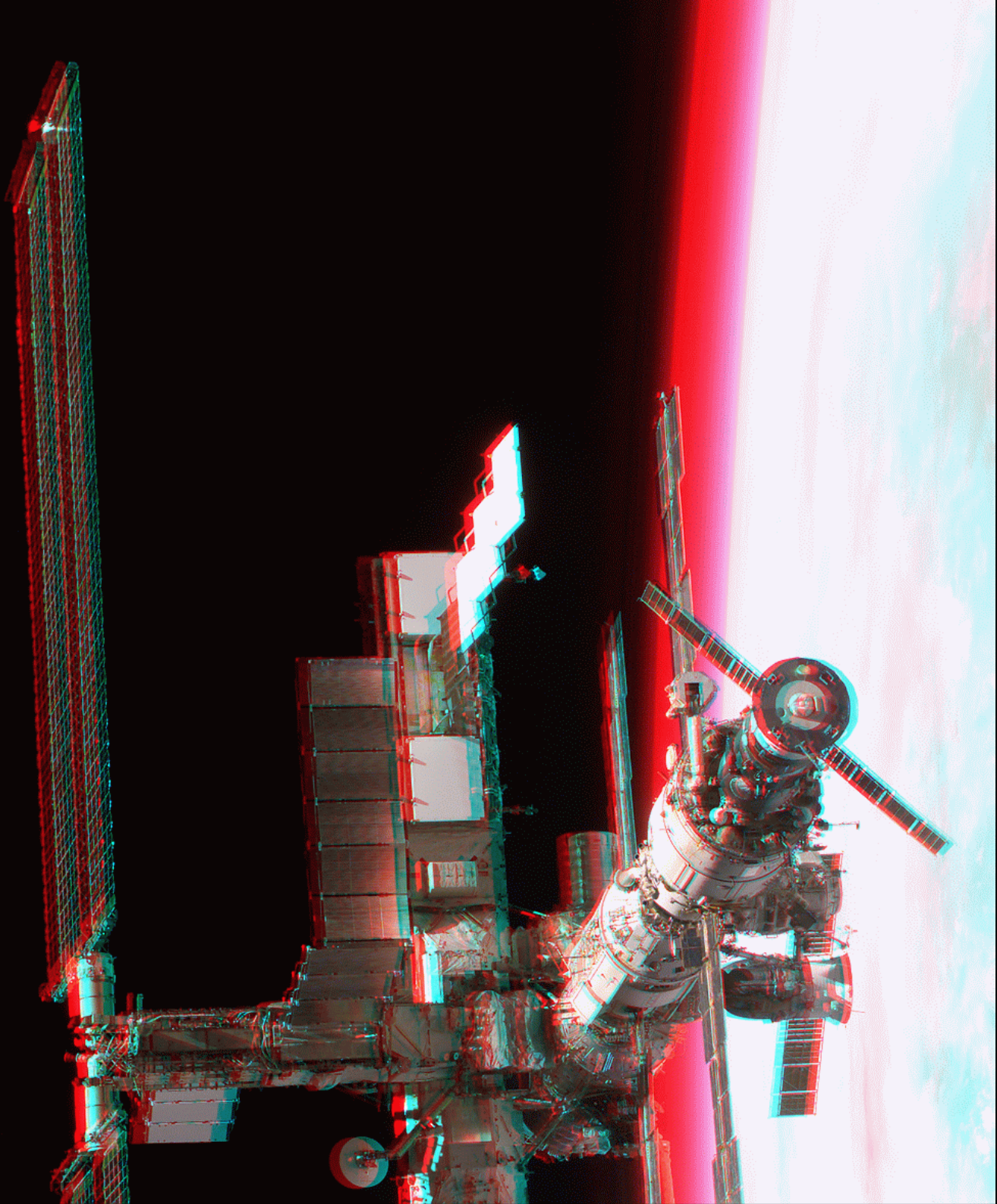


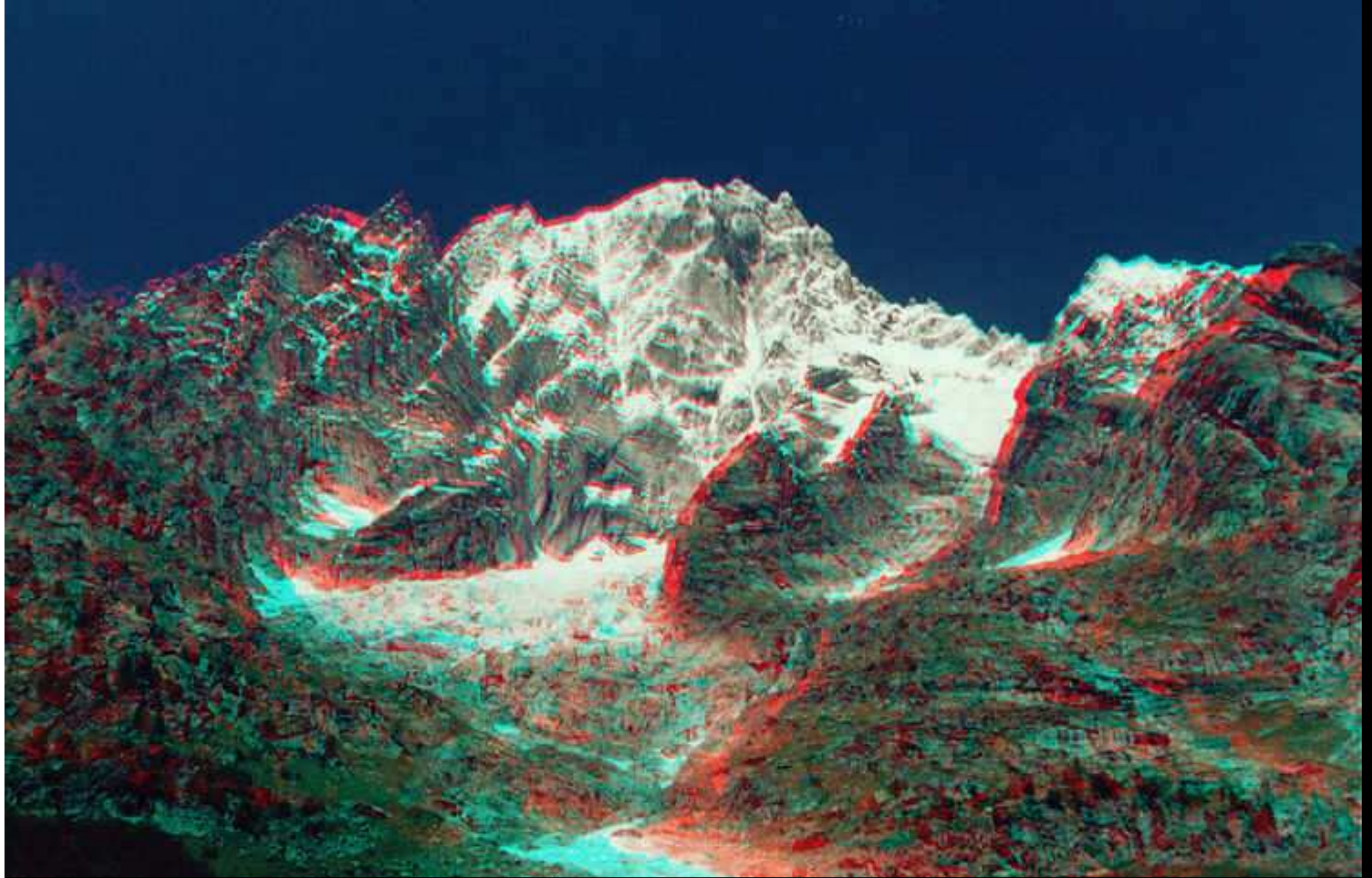












Dziękuję za uwagę!