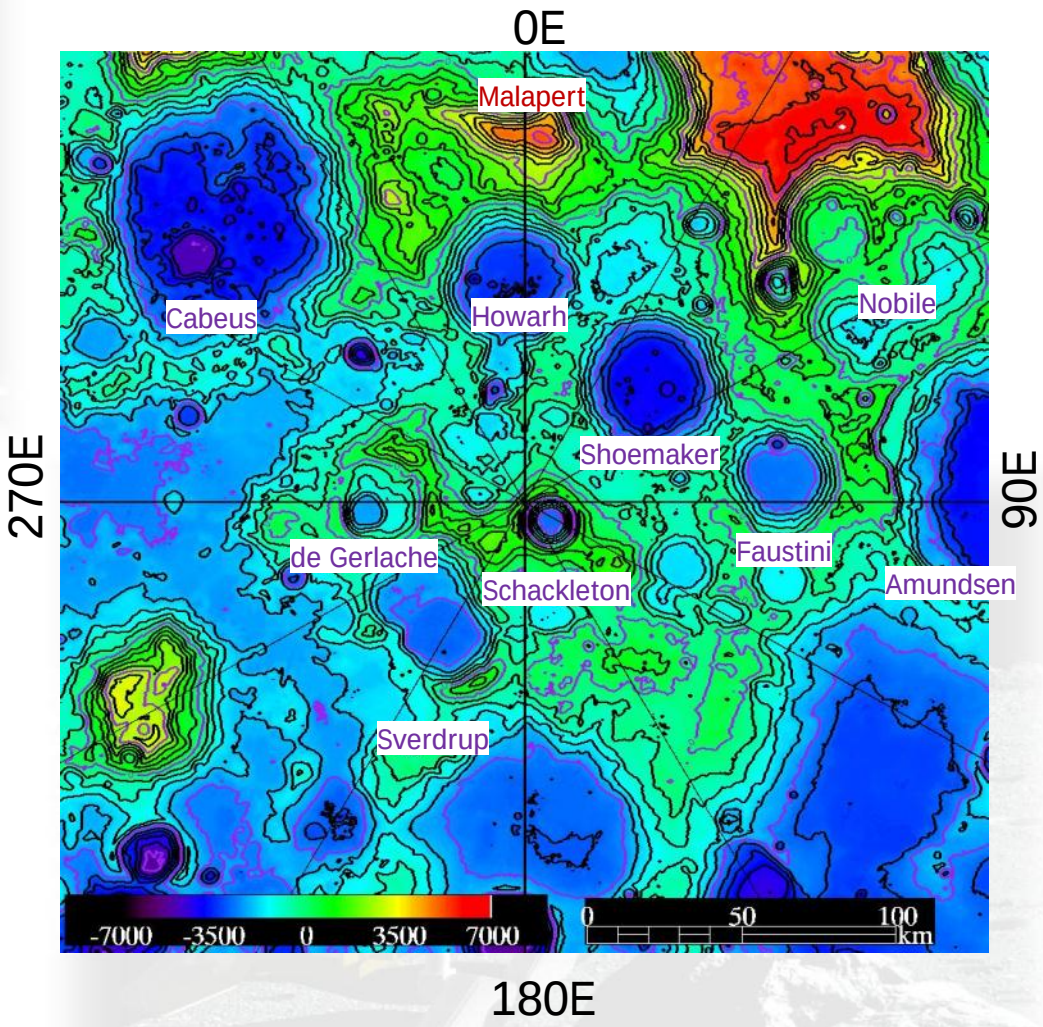
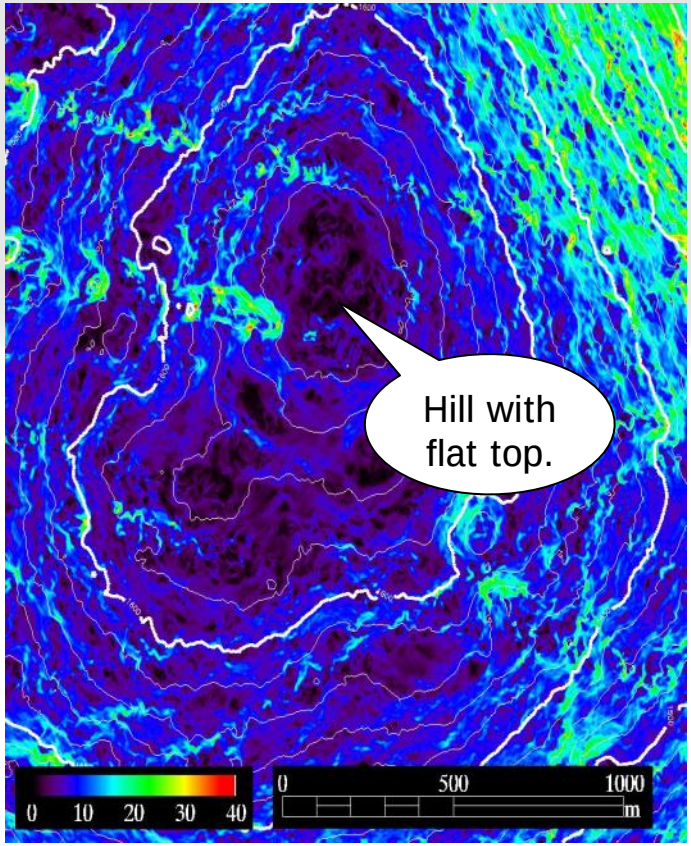
JAXA's activities related to landing site analysis

- JAXA studies on candidate landing sites in the lunar polar locations.
- Digital Terrain Model (DTM) around the lunar south pole based on both the LRO and KAGUYA data is used for this work.
- Major criteria for landing site selection is as follows.
  - Reasonable terrain
    - ✓ Shallow slope angle
  - Sunlight condition
    - ✓ Power generation and night survival
  - Communication
    - ✓ Direct to JAXA's ground station
  - Scientific interest
    - ✓ Geology and volatile
- Considering the criteria above, landing site analysis around polar region is ongoing.



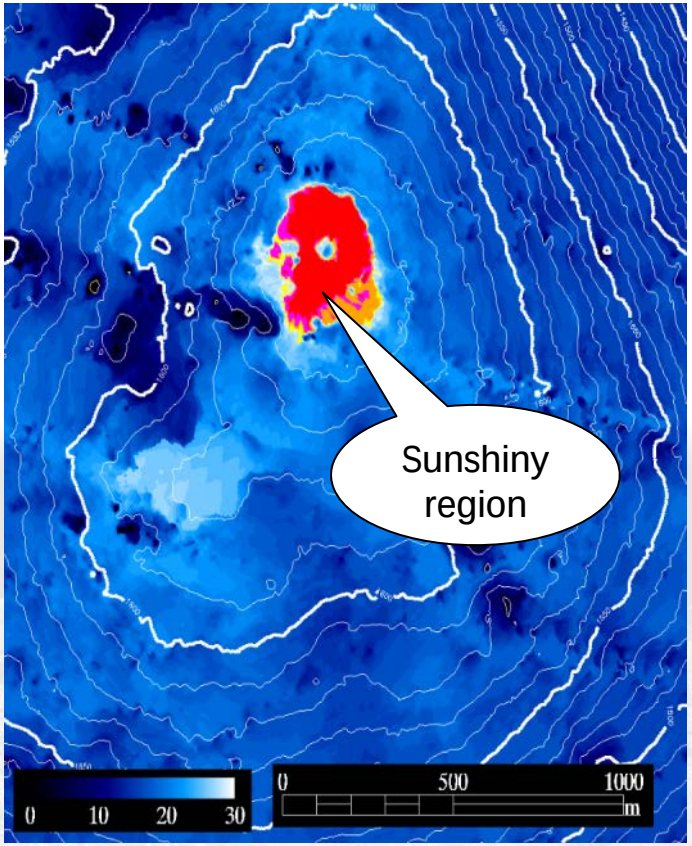
DTM Area: South Pole 300x300km
Resolution: 2 to 10m (Based on LRO/LOLA and Kaguya/TC)

An example of landing site analysis 1
Terrain and sunlight conditions



Terrain slope angle [deg.]
From 0 deg. (black) to 40 deg. (red)

Directly calculated from DTM

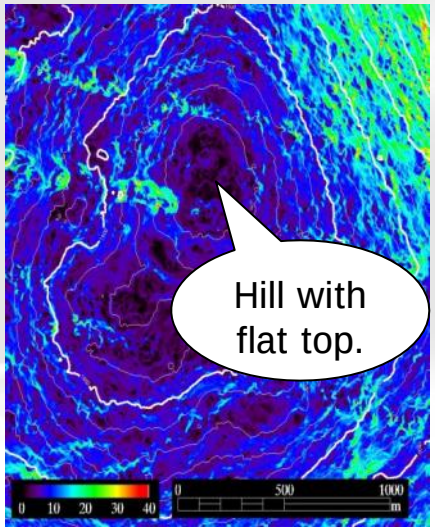


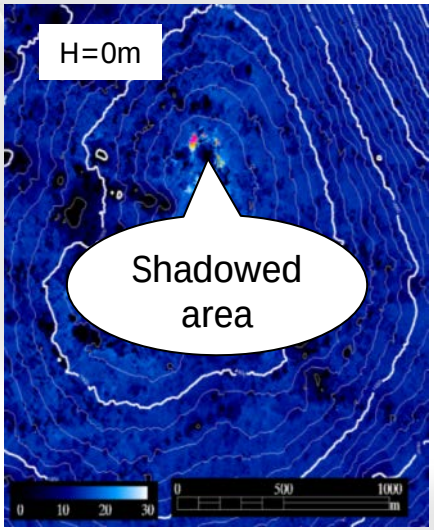
Maximum continuous sunlight [Earth day]

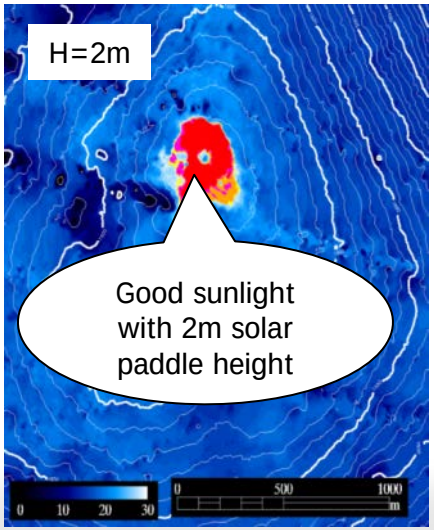
Red: >120, Magenta: >90, Orange: >60, Yellow: >30

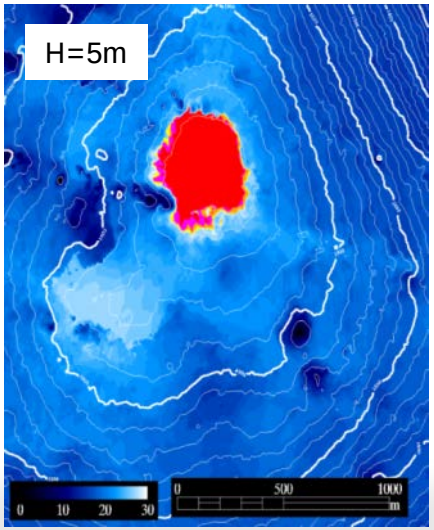
Resulted from simulation of solar irradiation

An example of landing site analysis 2
Sunlight and communication conditions in different height





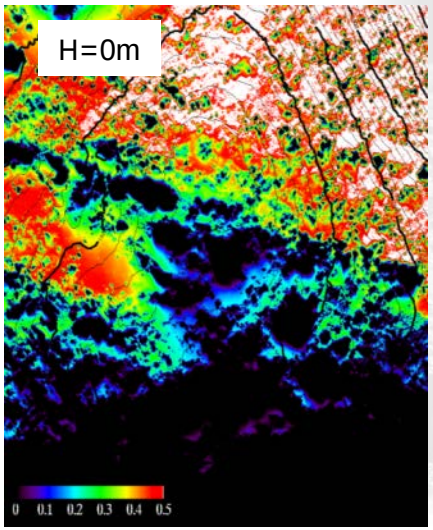


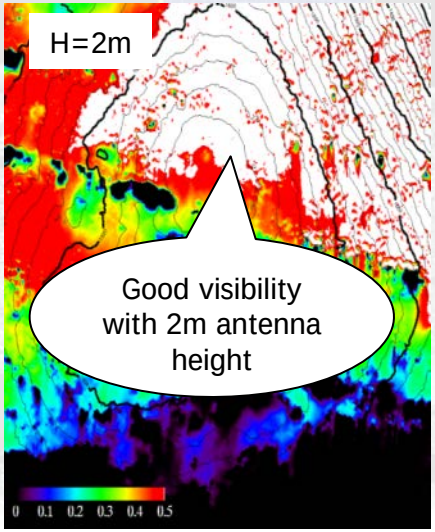


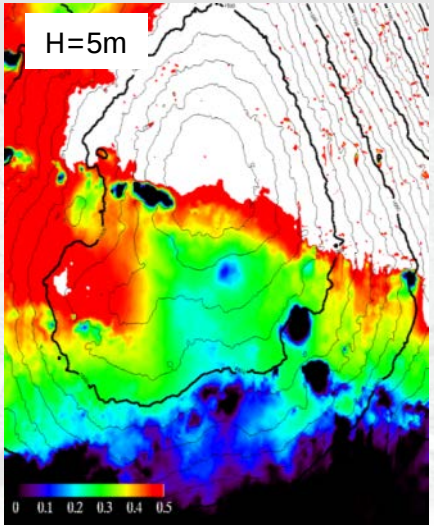
Maximum continuous sunlight (Red: >120, Magenta: >90, Orange: >60, Yellow: >30)

This area has features of

- Flat terrain
- About a half year continuous sunlight
- Good visibility to Earth
- Permanently shadowed area nearby







Visibility to the Usuda ground station (white: >50%)