
ARLISS2014
Tokyo University of Science Kimura Laboratory
So-Seki

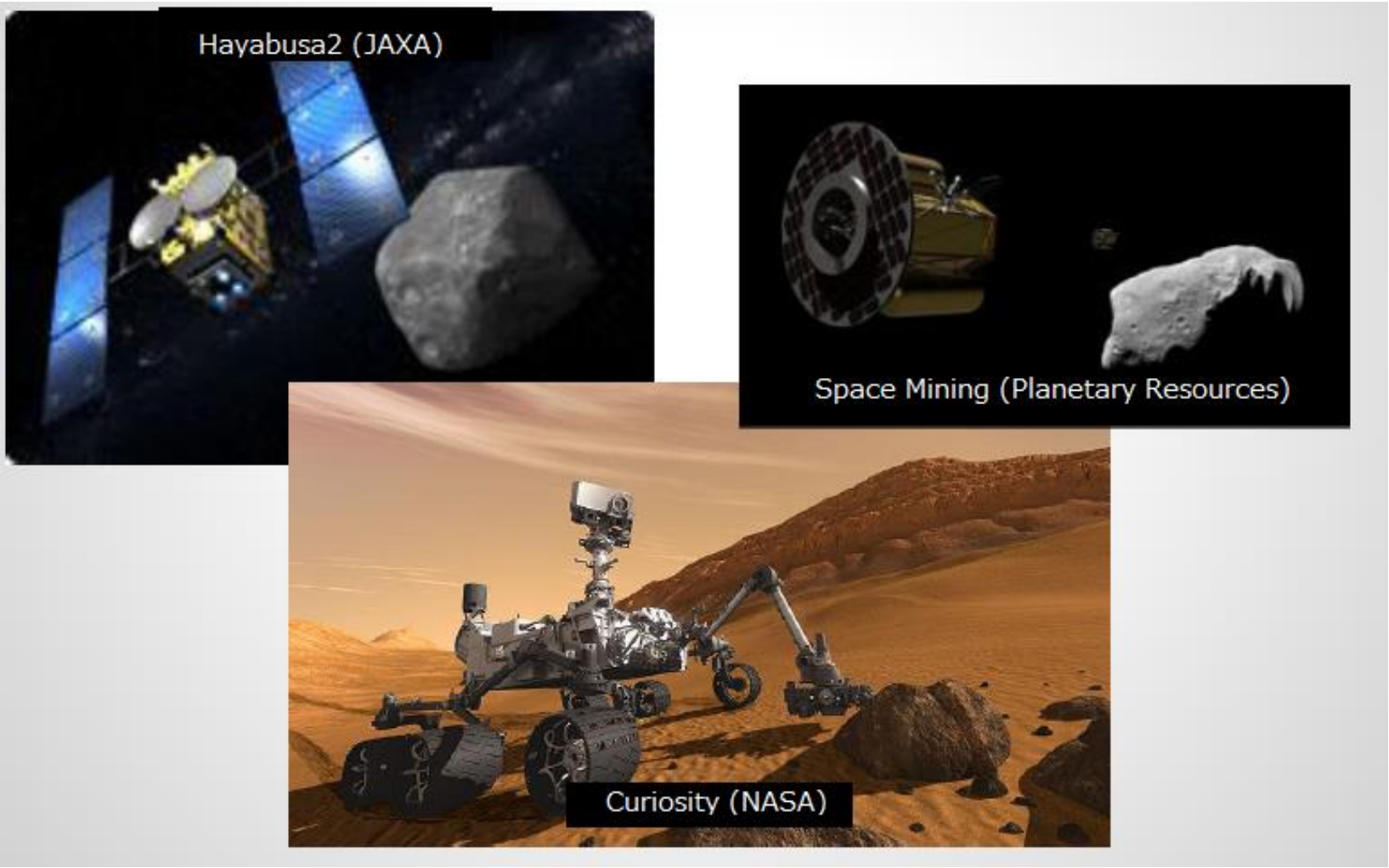
Agenda

1. Member
2. Mission
3. About CanSat
4. Results

1.Member

- Nakamura
- Doi
- Hosaka
- K.Sato
- Narita
- Shiraishi
- Tanaka
- T.Sato
- Ueno

2.Mission


Hayabusa2 (JAXA)
Space Mining (Planetary Resources)
Curiosity (NASA)

2.Mission

Camera

Extract Horizon

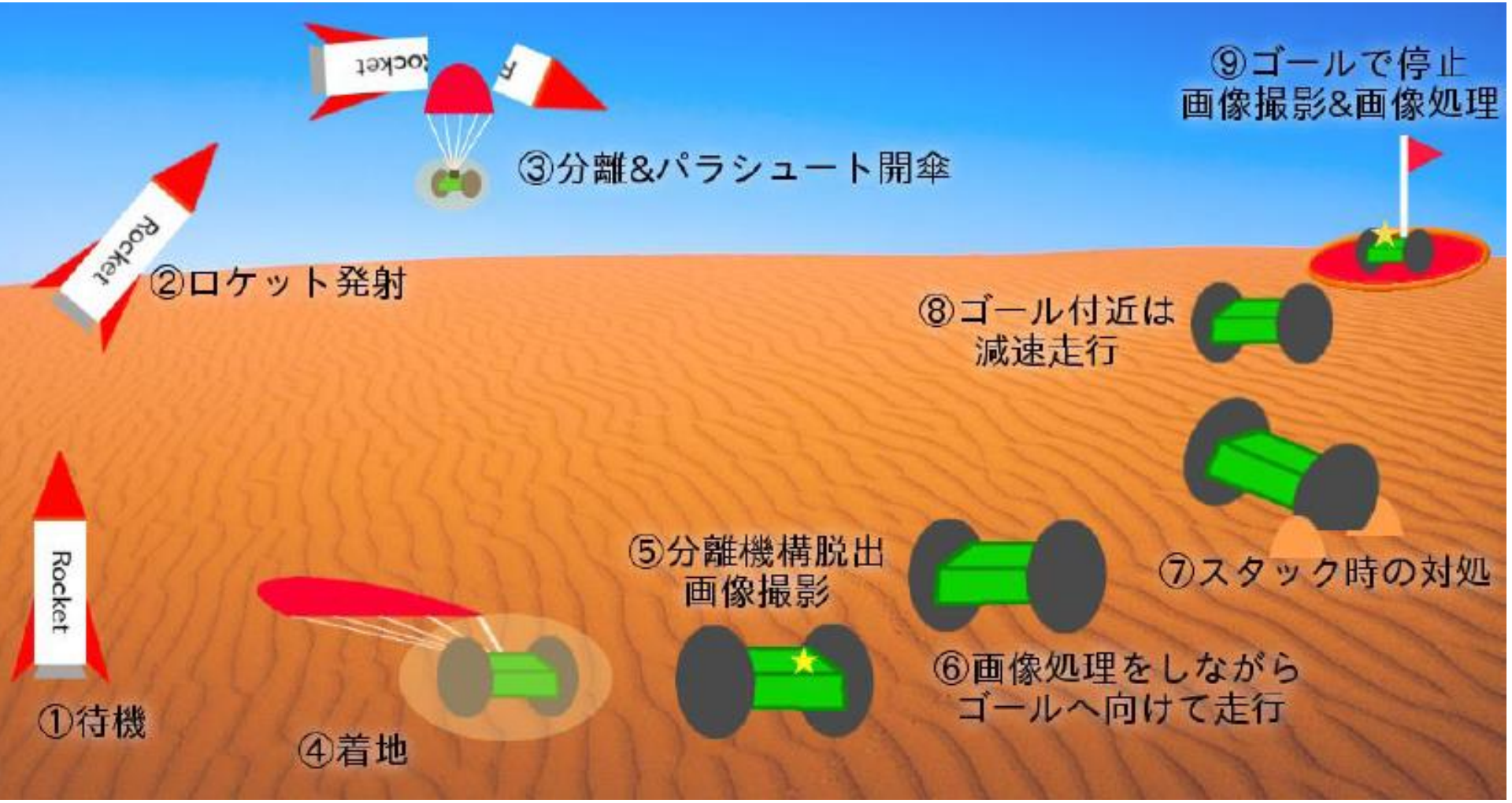
Maching

Horizon Database

Locate

2.Mission

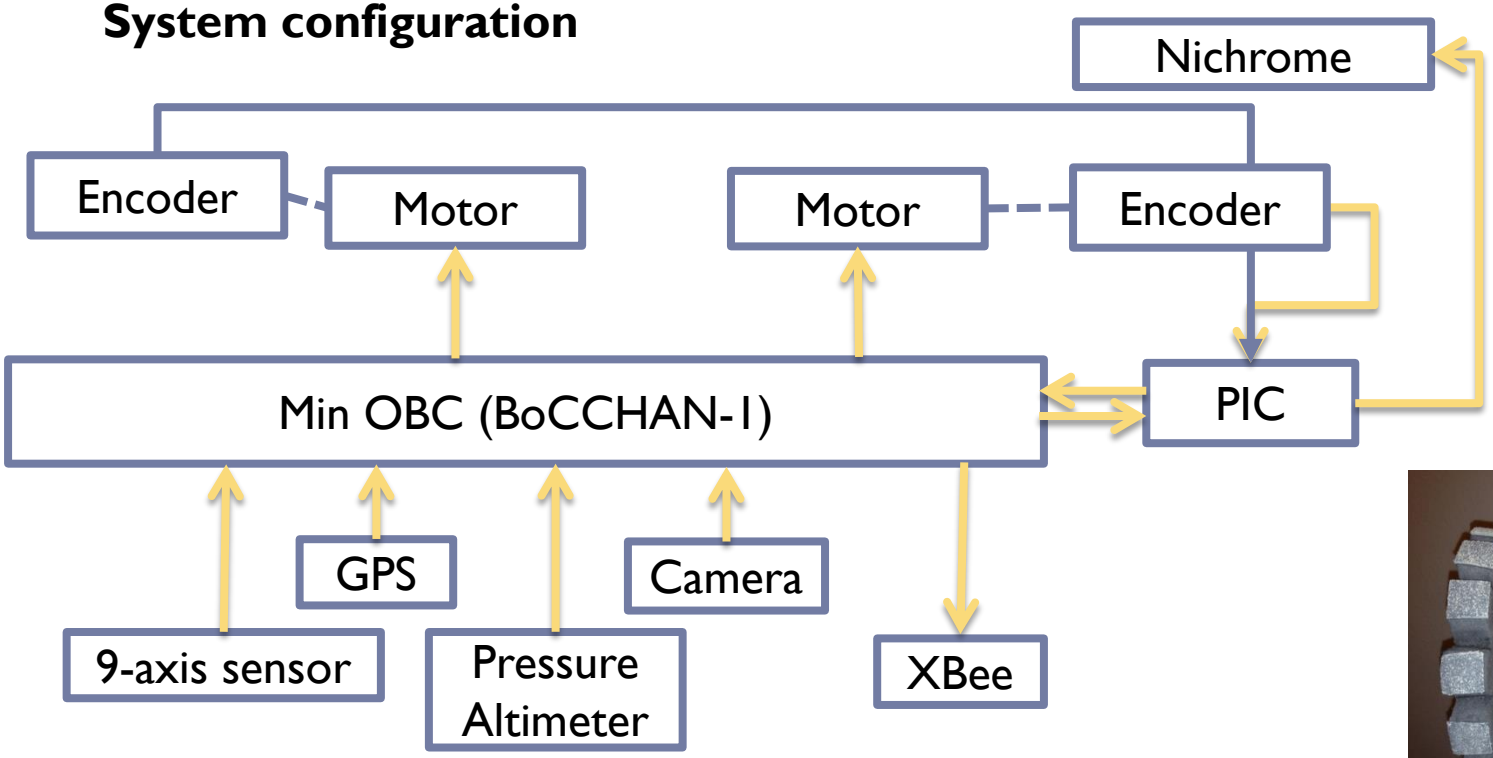
	Run Back	Image Processing
Minimum Success(30%)	Make a good landing without any trouble.	Take a picture.
Middle Success(70%)	Separate from parachute and run more than 3km to the goal.	Find the edge and extract prospective horizon from the picture.
Full Success(100%)	Reach the goal, obeying regulations of ARLISS.	Extract only horizon from the picture which taken at landing place or the goal.
Advanced Success(120%)	-	Extract only horizon from all of the taken pictures.

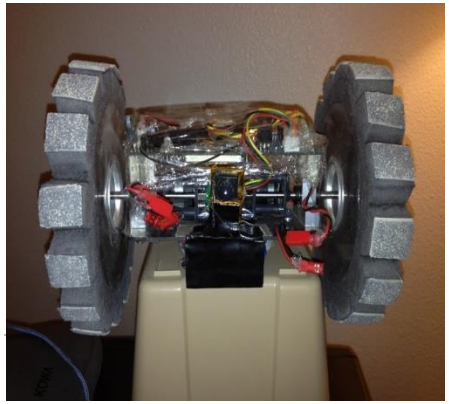

⑨ゴールで停止
画像撮影&画像処理
③分離&パラシュート開傘
②ロケット発射
⑧ゴール付近は
減速走行
⑤分離機構脱出
画像撮影
⑦スタック時の対処
⑥画像処理をしながら
ゴールへ向けて走行
①待機
④着地

3.About CanSat

Size	230mm×Φ140mm
Weight	**1023g**

System configuration





3.About CanSat

- To Avoid Stack
  → Recognize stacking and move characteristic.

  (Video)

- To Avoid Runnning over Parachute
  → Additional Image Processing program.
  Recognizing parachute with Hue image.

4.Results (Run Back)

~First Try~

- 3603m

Because of stack.

~Second Try~

- Didn't separate Parachute

Because of Timer Error caused by SD card I/O Error.

4.Results (Image Processing)

Fig1: Before imaging

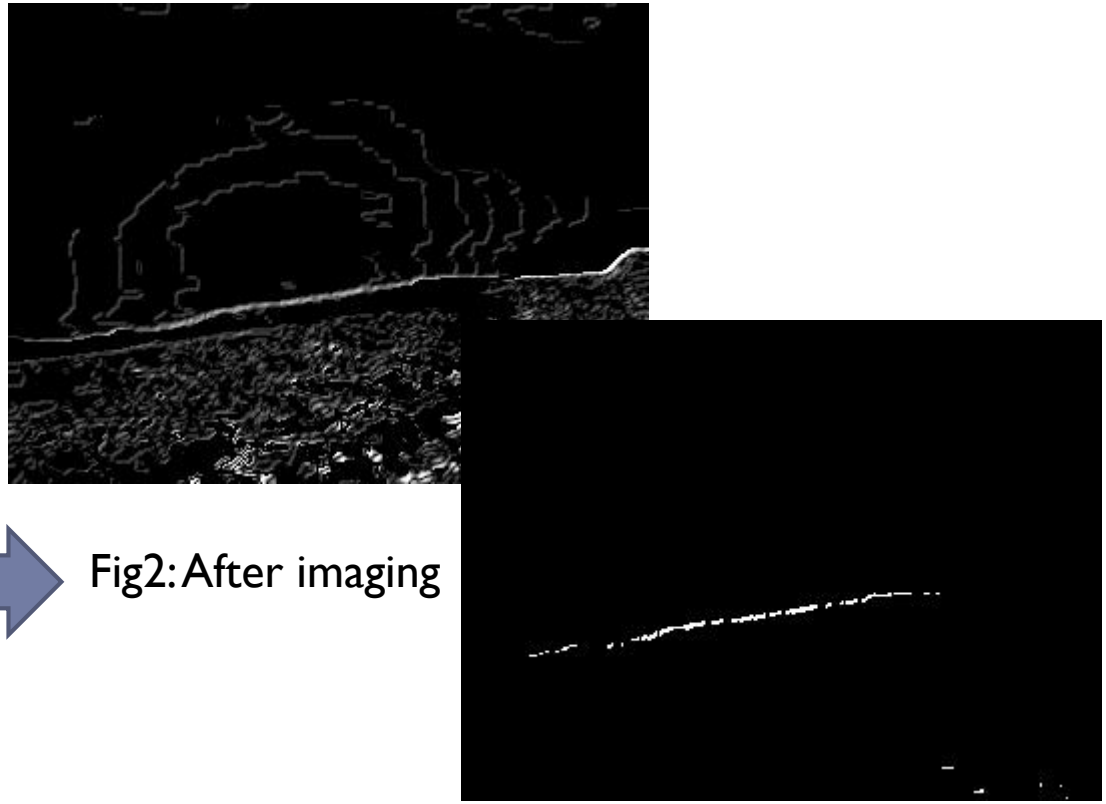


Fig2: After imaging

- Get images and save the picture to SD card.→Clear
- Find the edge and extract prospective horizon from the taken picture→ (※ Clear on our experiment after second launch)

Thank you