JAXA Space Science Program and International Collaboration

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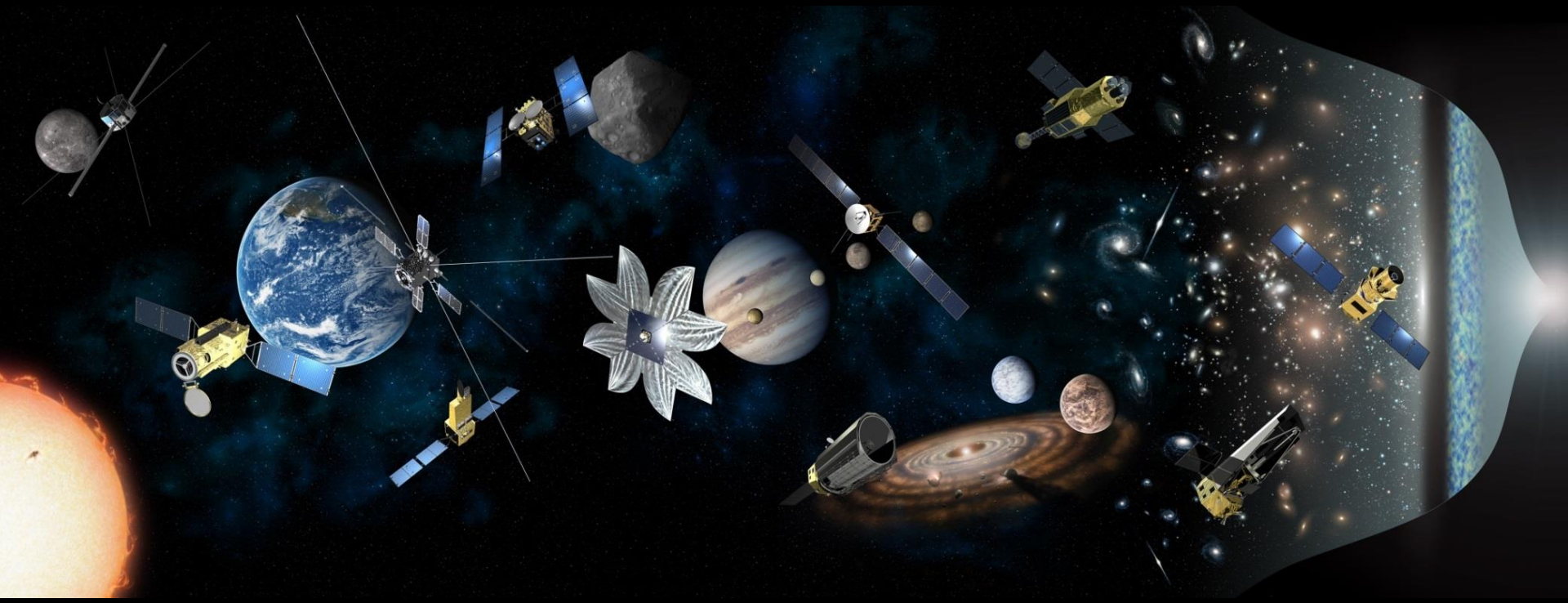


July 6, 2017

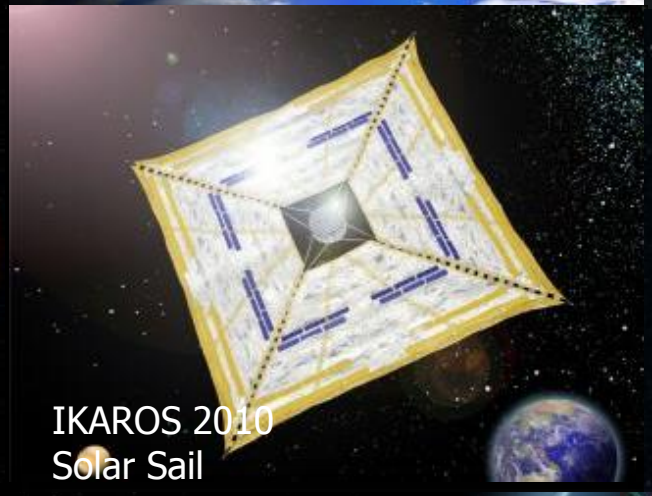
JAXA recent science missions

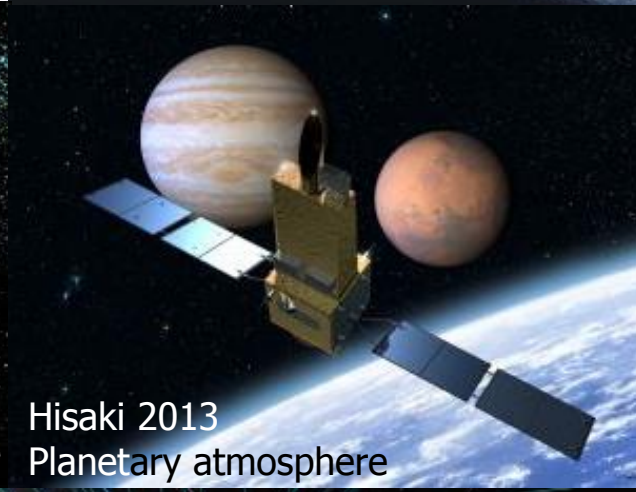

HAYABUSA 2003-2010
Asteroid Explorer


HINODE(SOLAR-B)2006-
Solar Observation

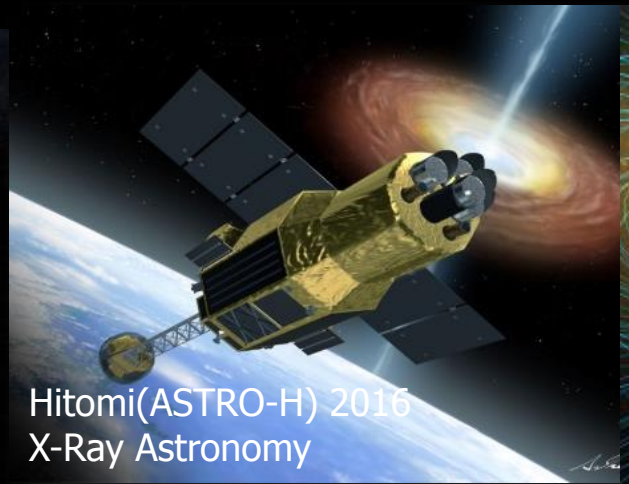

KAGUYA（SELENE)2007-2009
Lunar Exploration

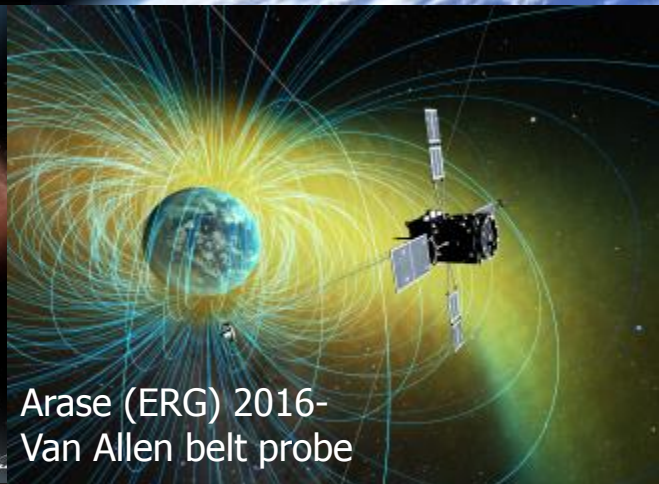

AKATSUKI 2010-
Venus Meteorology


IKAROS 2010
Solar Sail


Hisaki 2013
Planetary atmosphere


HAYABUSA2 2014-2020
Asteroid Explorer


Hitomi(ASTRO-H) 2016
X-Ray Astronomy


Arase (ERG) 2016-
Van Allen belt probe

JAXA – ESA Current Cooperation

Hinode (SOLAR-B)

In Operation

HINODE is a JAXA led solar observatory launched into a polar orbit.

Status

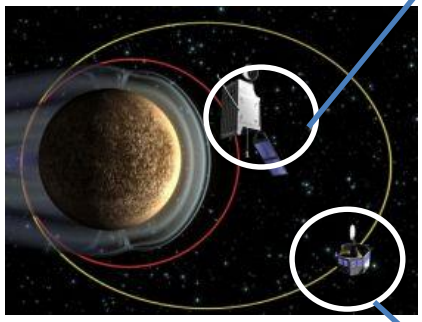
Launched in 2006

- ESA is providing ground station coverage through the Svalbard Satellite Station.

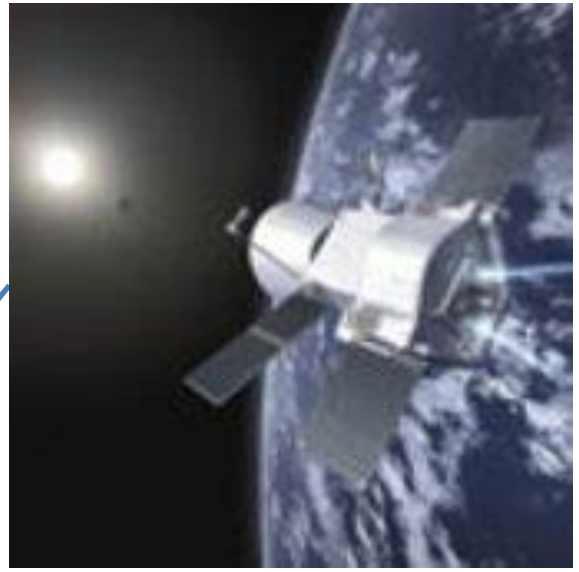
BepiColombo

To be launched 2018

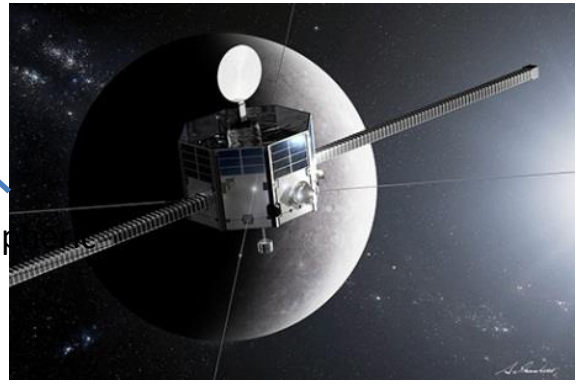
BepiColombo is a joint ESA – JAXA mission to the planet Mercury.



MPO: ESA
Mercury Planetary Orbiter



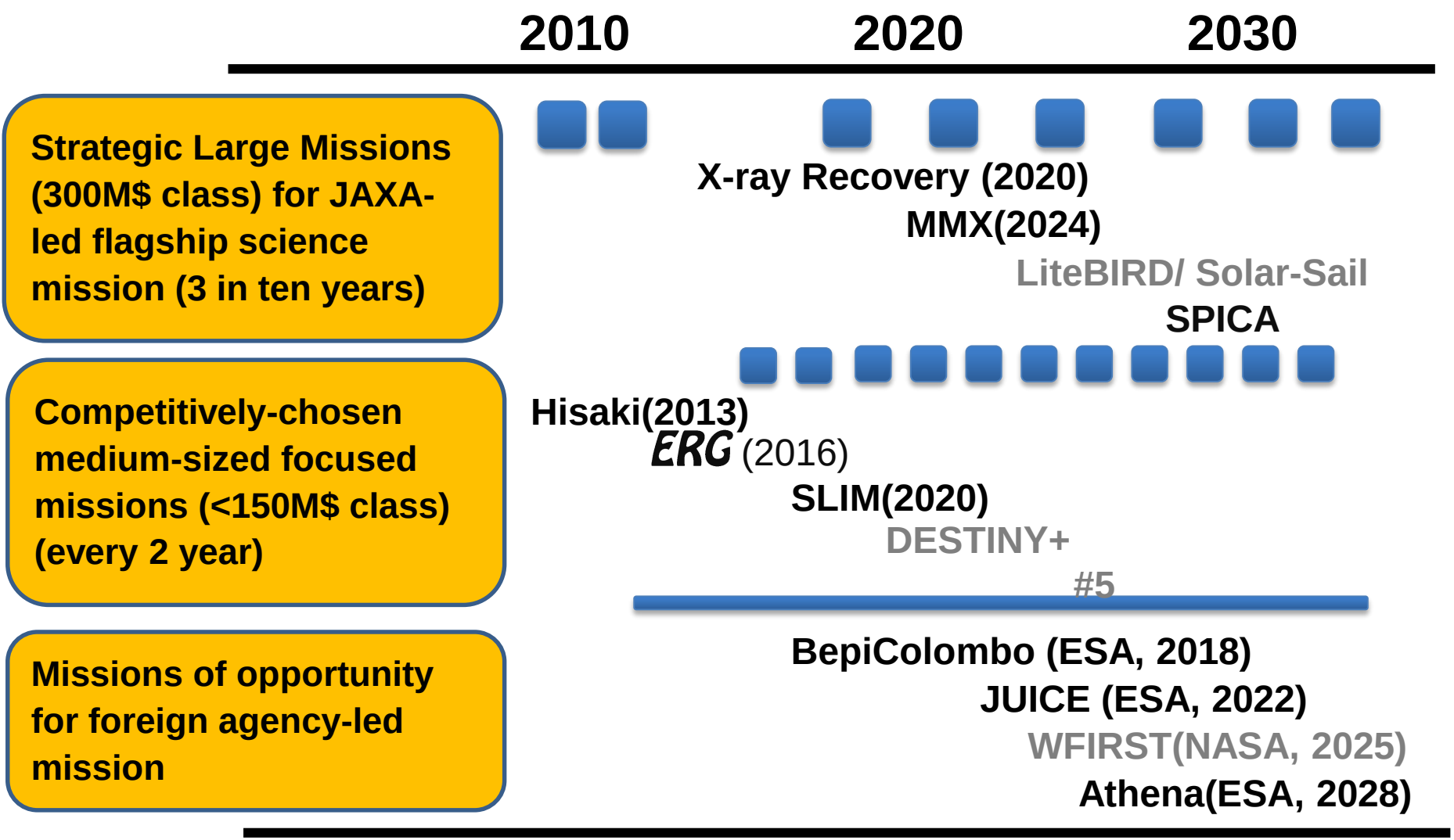
MMO: JAXA
Mercury Magnetosp
Orbiter



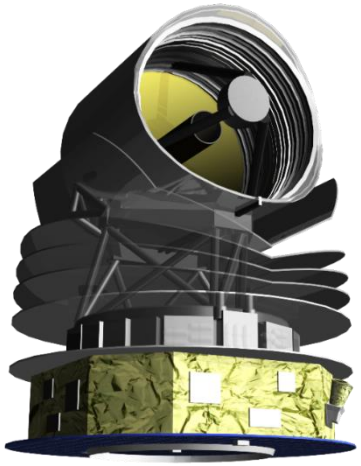
Status

- Flight model of MMO arrived at ESTEC in 2015 for the final Assembly, Integration, Verification and Test.

JAXA Space Science Roadmap



Strategic *L-class* missions with HIIA/H3



#4 ESA-Led SPICA

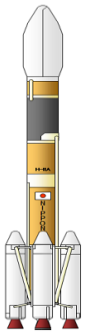
Late 2020s

Large-size #3
Lite BIRD or Solar-Sail
24 months Phase-A1

FY2027

#2 Martian Moons eXplorer (MMX)

FY2024



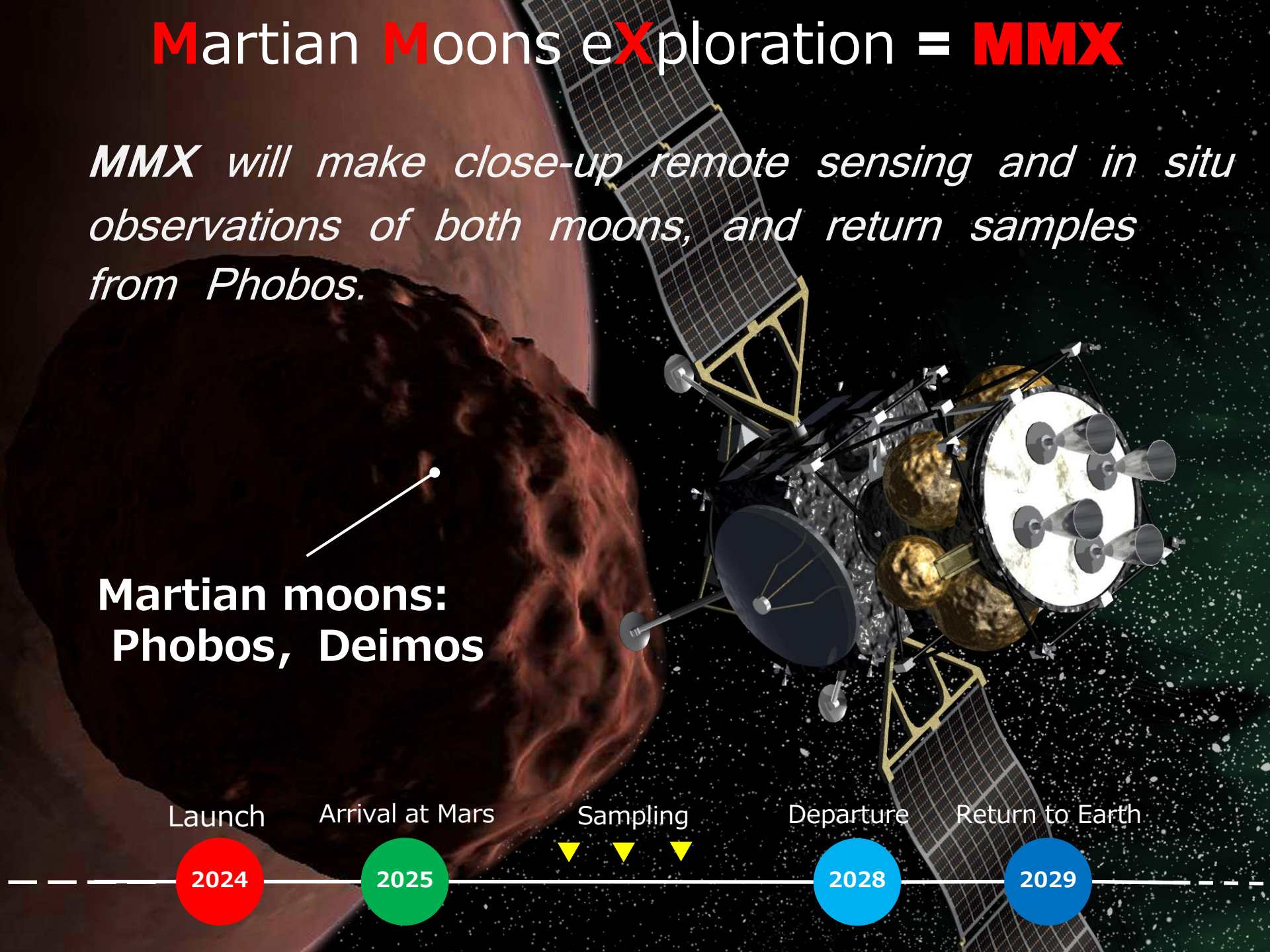
Strategic Large Missions (300M$ class) for JAXA-led flagship science mission with HIIA/H3 vehicle (3 in ten years)

#1 X-ray astronomy Recovery mission

FY2020

Martian Moons eXploration = MMX

MMX will make close-up remote sensing and in situ observations of both moons, and return samples from Phobos.

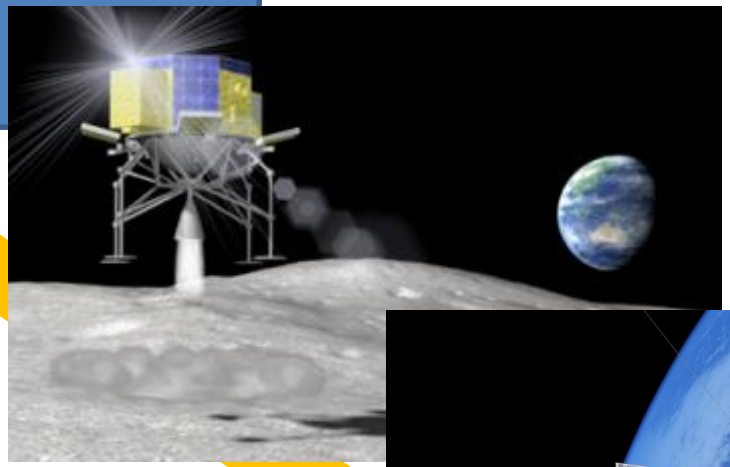


Competitive *M-class* missions

Medium-size #4
Under selection

FY2021

#3 Moon landing (SLIM)



FY2019

#2 van Allen belt (ERG)

FY2016

#1 *Hisaki*
(UV planet)

FY2013

Competitively-chosen medium-sized focused missions (<150M$ class)

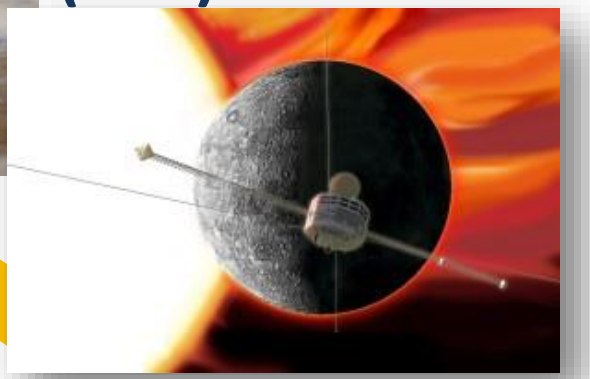
Foreign agency-led Large missions

?

#3 Athena (ESA)

#2 Jupiter Icy moons JUICE (ESA)

#1 Bepi-Colombo (ESA)



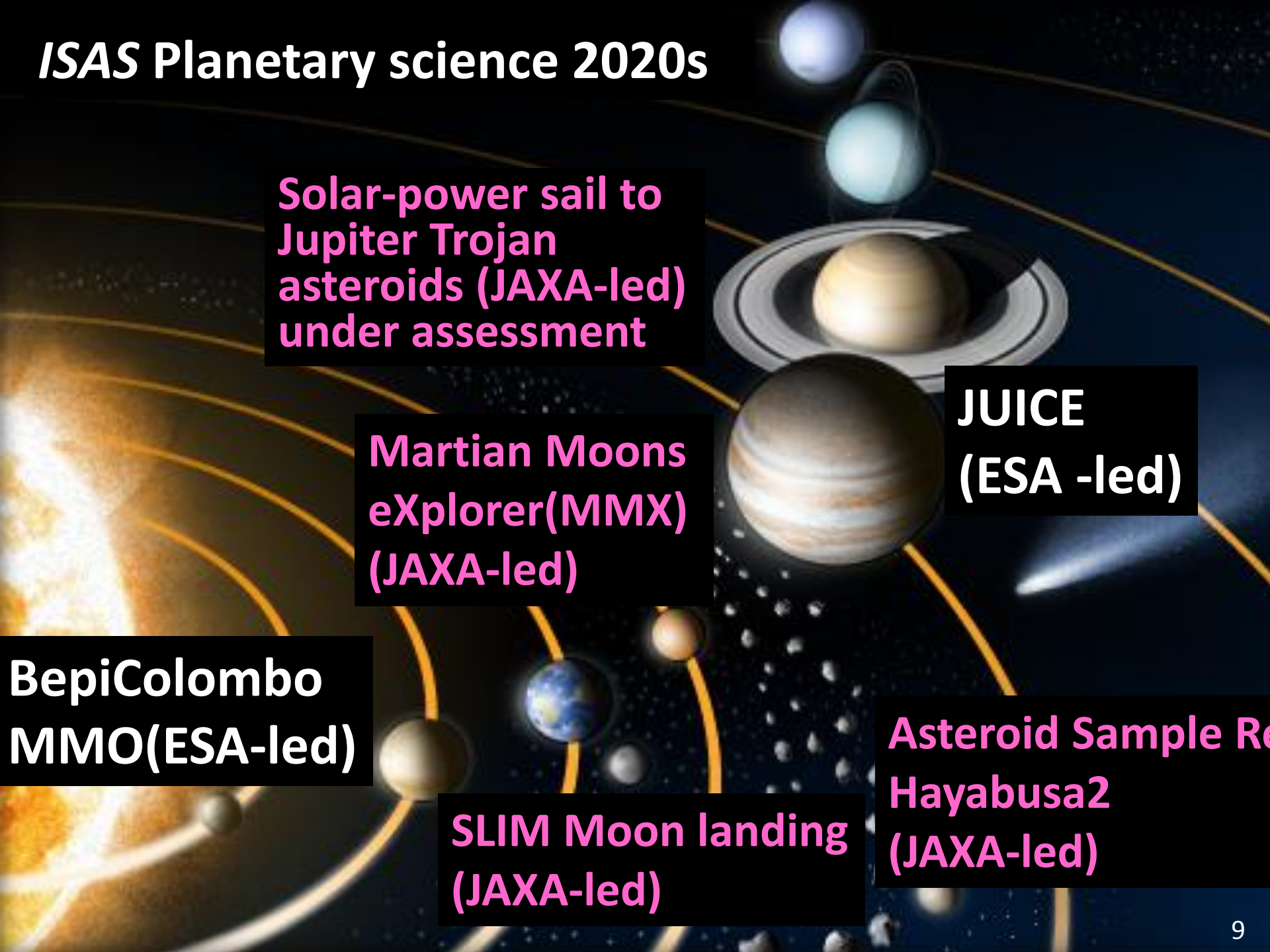
FY2028

FY2022

FY2018

Missions of opportunity for foreign agency-led mission

ISAS Planetary science 2020s



Summary

- ISAS has been having collaborations with ESA and European partners in many missions, and those missions have been producing excellent scientific returns without exception.
- Collaborations with ESA and European partners continue to be vital for our activity, in particular in our L and M class missions.
- ISAS/JAXA is also eager to participate in the ESA-led large missions that JAXA cannot afford.

Thank you for your attention.