

# NASA Mission Management Updates to the *Hinode* Science Working Group

September 2019

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On behalf of the US instrument teams

# CLASP-2

- Successful sounding rocket launch April 11, 2019.
- [IHOP 368](#)
- Science Target: Chromospheric magnetic fields
- Spectropolarimeter (Mg II h and k ~ 280 nm)
- Zeeman and Hanle effects
- Requested complementary Hinode (particularly SOT SP) and IRIS observations.

# AIR-Spec

- Successful high altitude aircraft flight July 2, 2019.
- [IHOP 374](#)
- Science Target: IR emission above the limb during eclipse
- Infrared spectrometer
- Requested complementary Hinode (particularly EIS) observations.

# BITSE

- Balloon launch window August 27 – September 15.
- [IHOP 385](#)
- Science Target: Coronal heating and solar wind acceleration
- Coronagraph ( $3.5 - 8 R_{\text{sun}}$ ) – not much information provided on instrument
- Requests complementary Hinode (particularly EIS) and IRIS observations.

# ESIS/MOSES III

- Sounding rocket scheduled for September 24, 2019 launch.
- [IHOP 380](#)
- Science Target: Explosive events in the transition region
- Slitless spectrographs with multiple projections (Ne VII 465 Å; O V 630 Å)
- FOV: 20'x10' and 10'x10'
- Requests complementary Hinode (all) and IRIS observations.

# EUNIS

- Sounding rocket scheduled for November 13, 2019 launch.
- [IHOP 365](#)
- Target: nanoflare heating
- Two co-aligned EUV multilayer telescope/spectrographs.
- 11' slit rasters across 2'
- Requests complementary Hinode (particularly EIS for calibration) and IRIS observations.

# MaGIXS

- Sounding rocket scheduled for April 2020 launch (slip likely).
- IHOP not yet submitted.
- Science Target: AR loop heating frequency.
- Soft X-ray spectrograph (6-25 A)
- Will request complementary Hinode (XRT & EIS) and IRIS observations.

# Ground-based

- WHPI (Whole Heliosphere and Planetary Interval) observing campaign
  - international initiative to study the entire solar-heliospheric-planetary system during solar minimum
  - hundreds of participants worldwide
  - focused on low-latitude coronal holes and recurrent high-speed solar wind streams
- ALMA (upcoming dates not yet provided):
  - various science targets
- GREGOR
  - Flux cancelation; field intensification; vertical fields
- SST
  - flare ribbons / current sheet (ToO); flux cancelation
- Eclipse
  - Ground-based observations from Chile (PCH jets)
- BBSO
  - Flux emergence; open flux elements; outflows into the corona
- Hida
  - Spicules and prominences



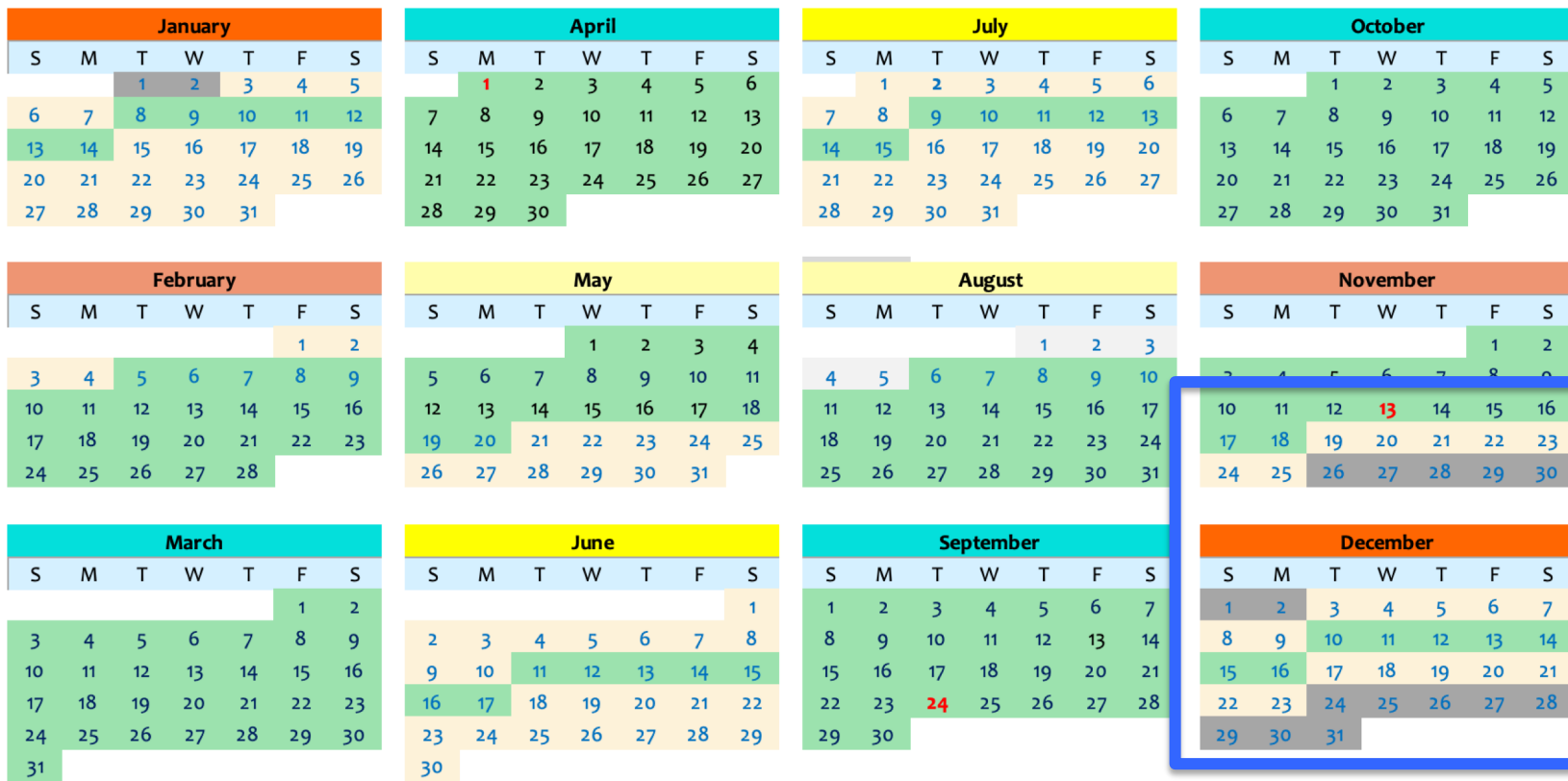
## 2-6. Focused Mode

- Status: Operable
  - No major issues reported from the teams.
- Focused Mode coordination
  - Routine communication during weekly instrument team meetings
  - Biggest challenge is ToO observatory coordination (ALMA/NuSTAR)
    - Savage is monitoring and communicating priorities as appropriate
  - Mid-week pointing changes implemented when necessary
    - Bamba-san (*continuing?*) has been monitoring solar conditions and suggesting repointing when appropriate (conditions have been exceedingly quiet)
- Priority list circulating with weekly meetings
  - Active Region evolution (flux emergence, waves in sunspots, flare monitoring)
  - Coronal Holes
  - Prominence / Filament
  - Disk-center (long baseline synoptic scans)
  - Polar magnetic network



# 2-6. Focused Mode

## 2019



Focused Mode (Tuesday upload only) Holiday period; standard FM <b>FM Season - Dates TBD</b>	Normal (Tuesday, Thursday, Saturday uploads)	Nominal IRIS Coordination Hinode Eclipse IRIS Eclipse	Rocket Launch / Notable Campaign
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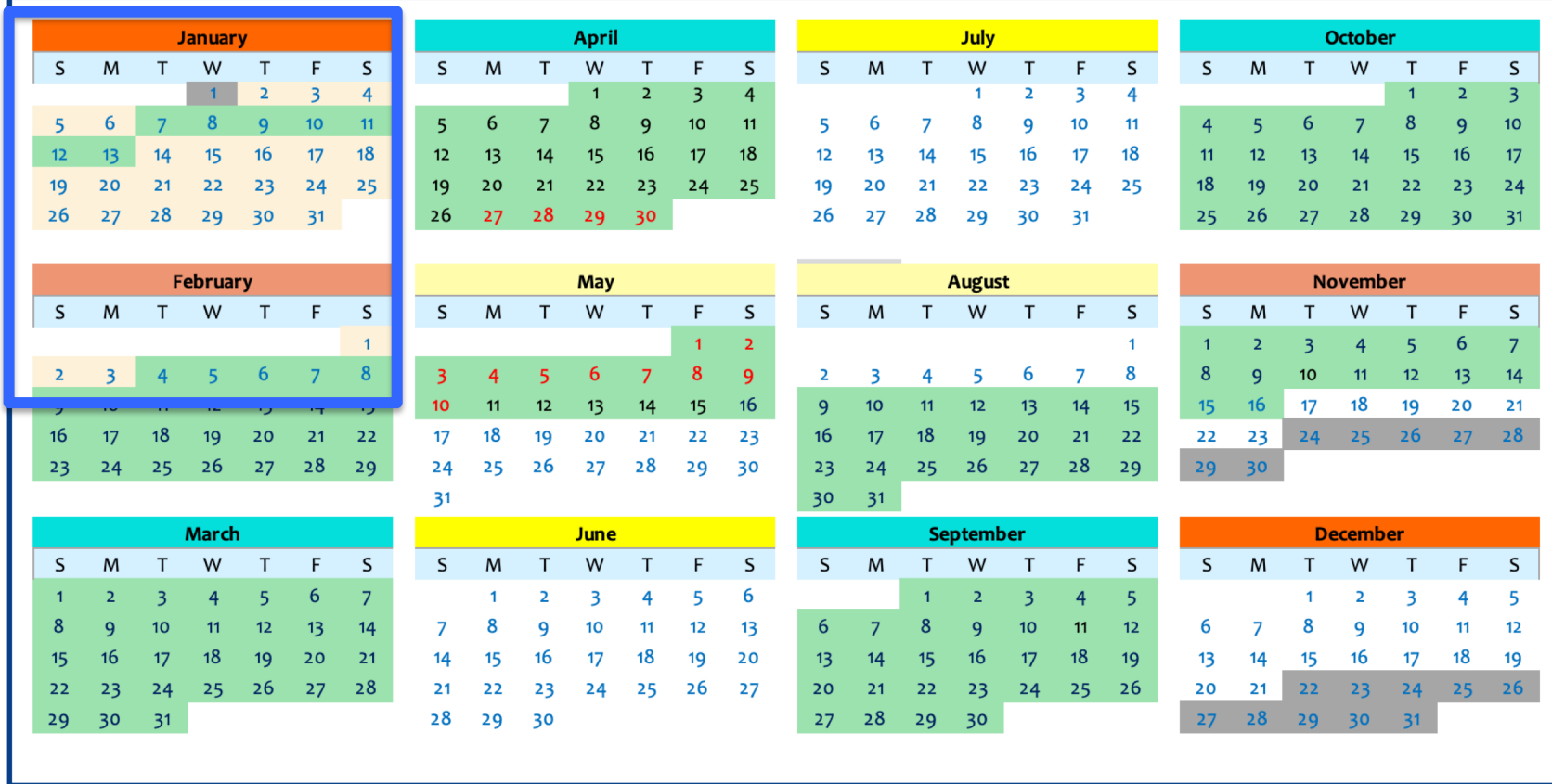
\*\*\* **CLASP-2** launched April 1. ESIS launches in Sept. EUNIS launches in Nov.  
 Other launches / campaigns [**PSP** – March, Sept; **ALMA** – April & Oct-Mar?]

Third Thursday in November is Thanksgiving (less US support already). FM during Dec/Jan holidays.



# 2-6. Focused Mode

## 2020



Focused Mode  
(Tuesday upload only)  
Holiday period; standard FM  
FM Season - Dates TBD

Normal  
(Tuesday, Thursday, Saturday uploads)

Nominal IRIS Coordination  
Hinode Eclipse  
IRIS Eclipse

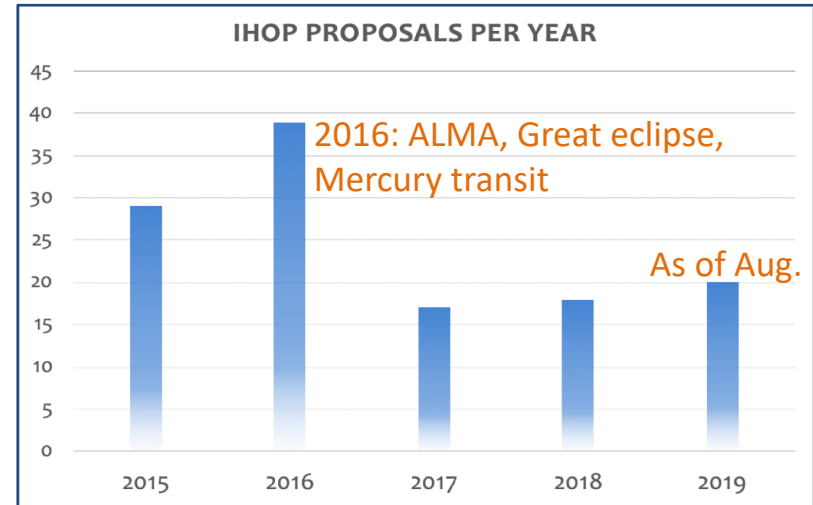
Rocket Launch / Notable Campaign

\*\*\* **MaGIXS** launches in 2020 (Spring 2020, Date TBD).

Other launches / campaigns [**PSP** – March, Sept; **Solar Orbiter** – April 27 – May 10; **ALMA** – Oct-Mar?]

Third Thursday in November is Thanksgiving (less US support already). FM during Dec/Jan holidays.

- IHOP program healthy
  - 385 total as of Aug. 2019



- HOP activity since Hinode 12 meeting:
  - PSP coordination
  - ALMA observations
  - WHPI campaign
  - Eclipse (Jul 2)
  - Continuing Cycle 25 Bright Points ([IHOP 336](#))
    - weekly campaign to observe solar cycle BP dependence since March 2017
  - CLASP-2, AIR-Spec, Hida, BBSO, SST, GREGOR, ESIS, EUNIS
  - Long period pulsations, photospheric/chromospheric coupling, jets, flux cancellation, filaments, ribbons/current sheet, emergence, plasma beta, field intensification, vertical fields, outflows

## 3-2. NASA situation

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- Senior Review Call for Proposals expected to be released Fall 2019.
  - Presentations Spring 2020
  - Review Forward Work from 2017 SRP