



— ALMA Workshop 2018a —

# **ALMA-SOL-CDAW19**

## **REPORT OF THE DATA ANALYSIS**

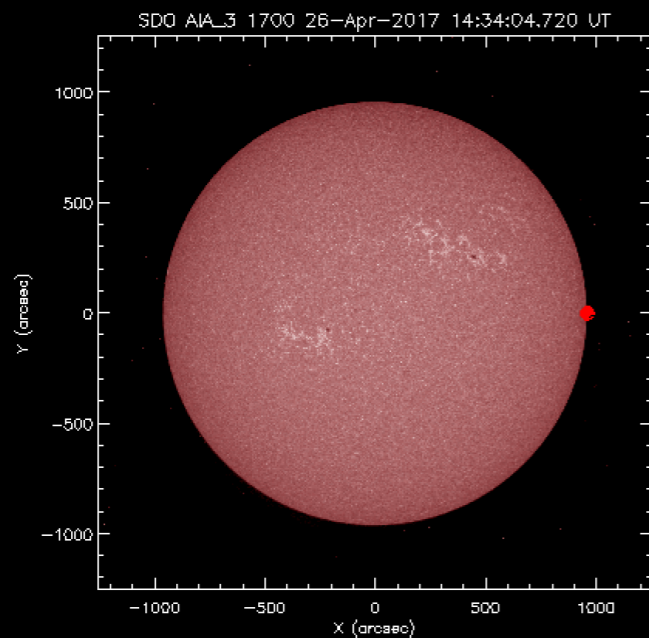
Masumi Shimojo  
ALMA project, NAOJ/NINS

2019/01/17@MTK, NAOJ

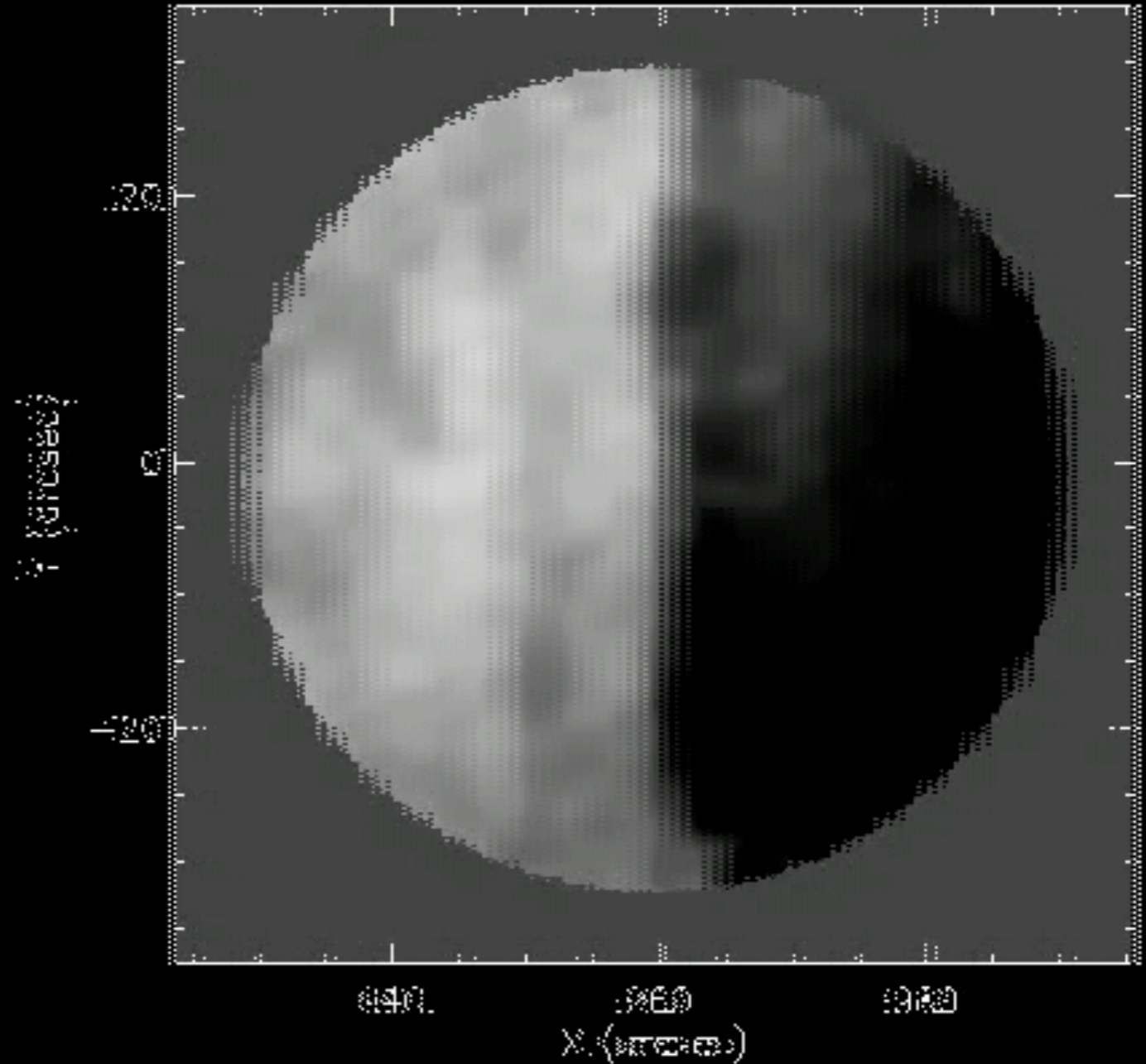
# EQUATORIAL LIMB WITH BAND3

- Project ID: 2016.1.00070.S
- PI: Masumi Shimojo
- Single-Pointing
- Observing Period:  
2017-04-26 14:35:34 - 16:11:47
- Size of the synthesized beam
  - Major: 2.34 arcsec
  - Minor: 1.78 arcsec
- Time cadence: ~2 seconds

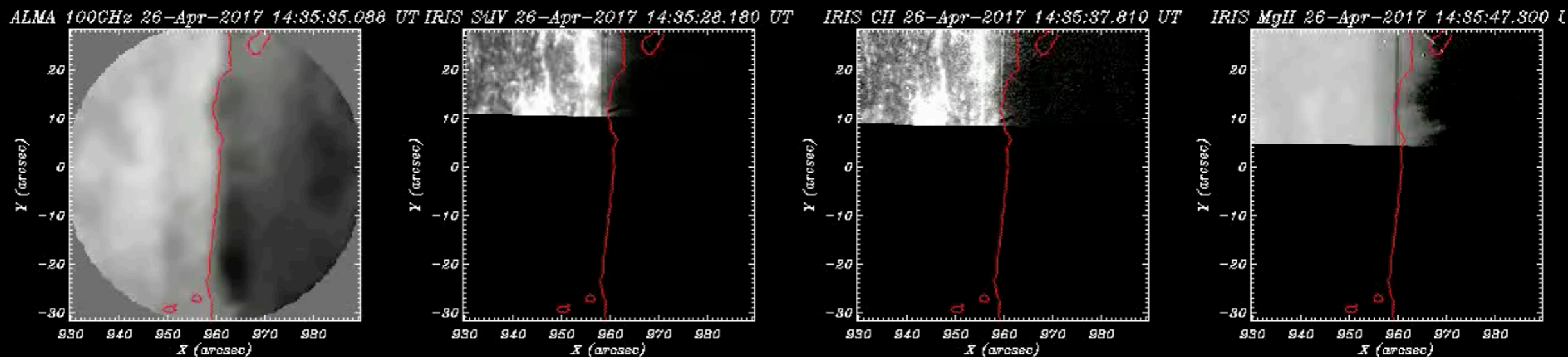
IDL 0



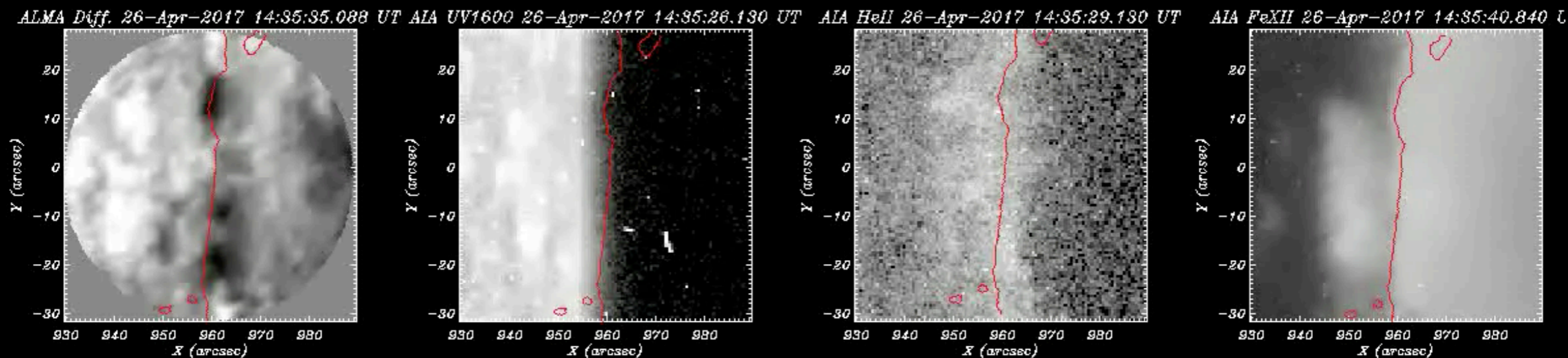
ALMA 1100 GHz 2bit/Chan/216-Apr-2017 14:35:38.053



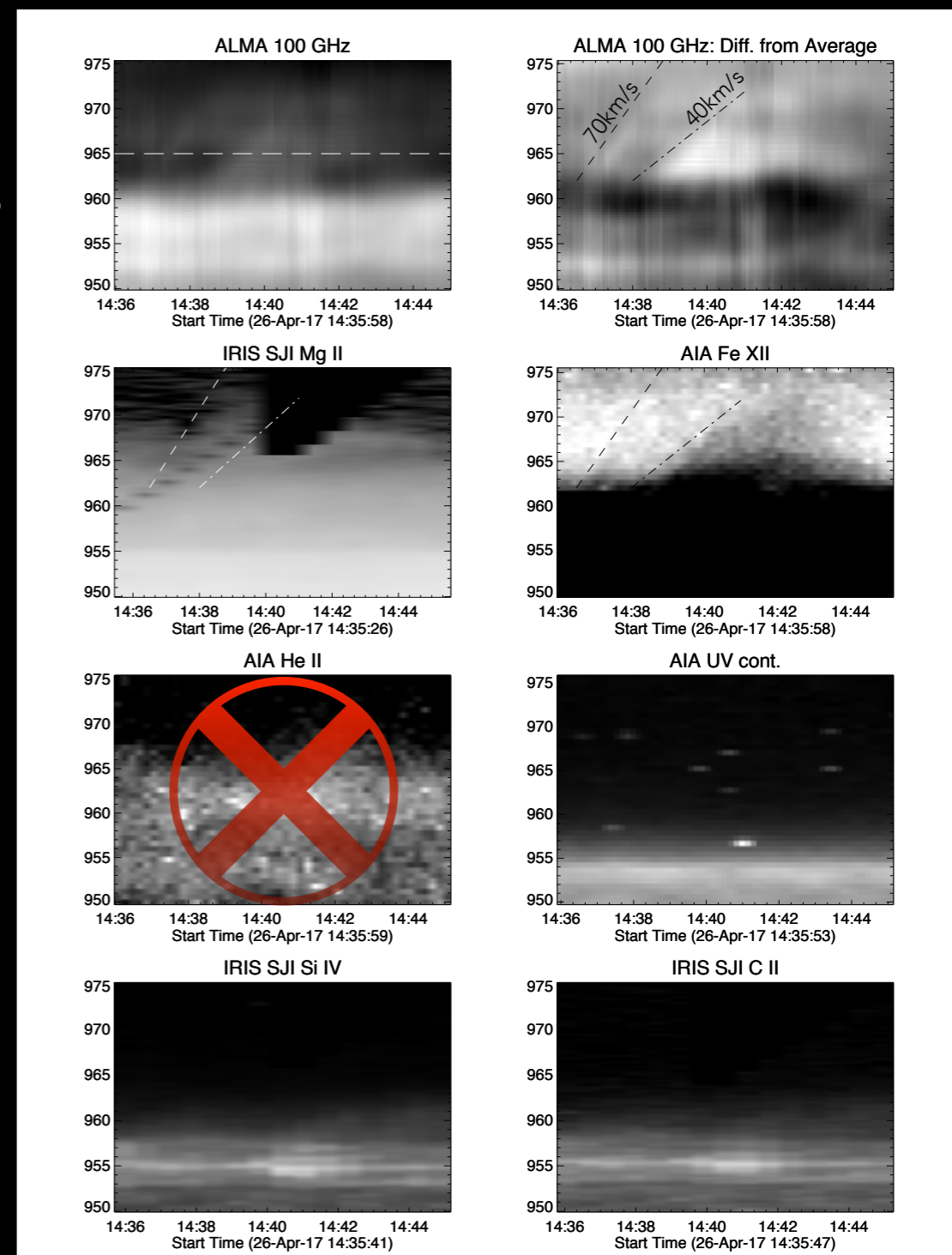
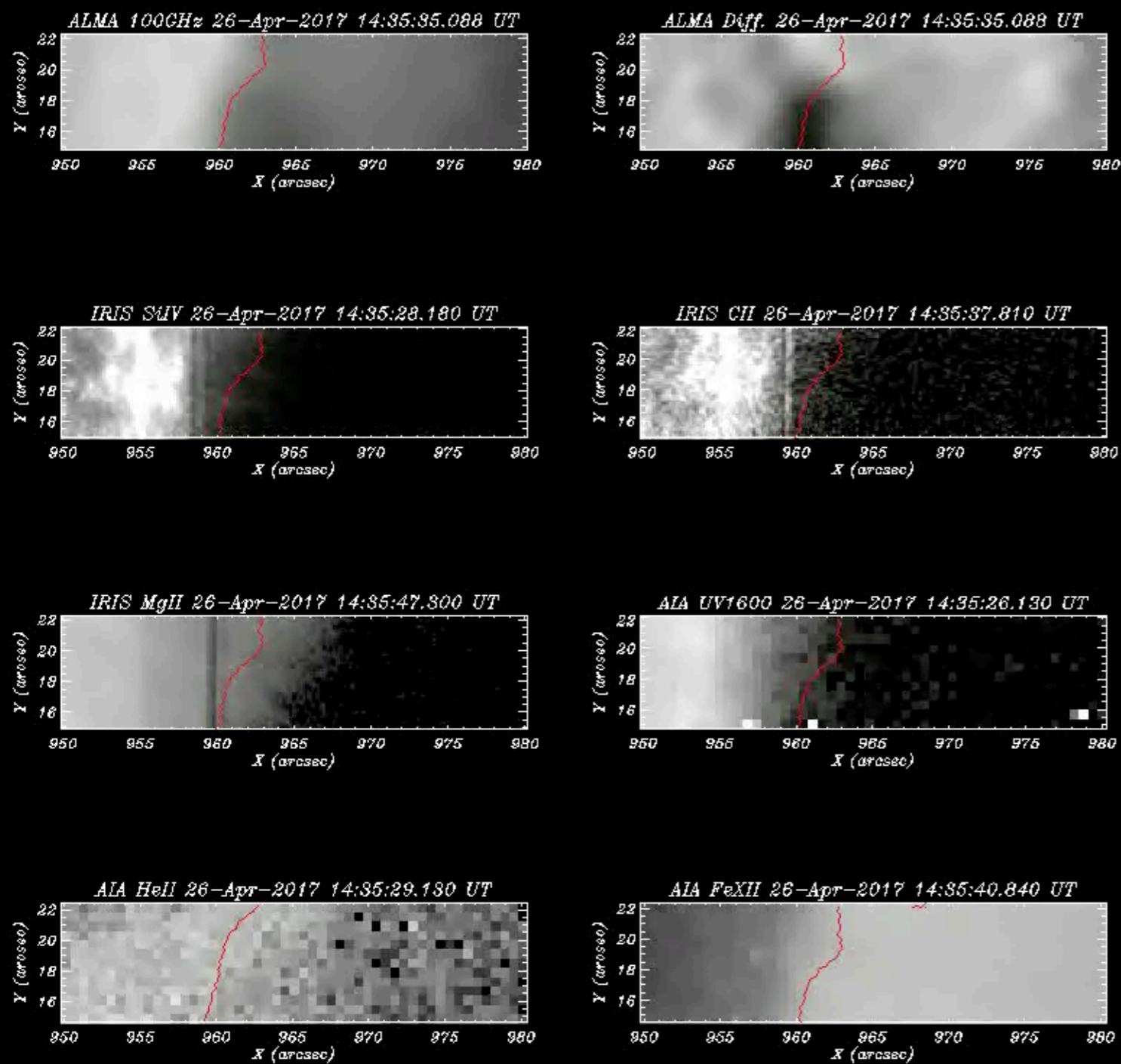
# ALMA-IRIS-AIA MOVIE



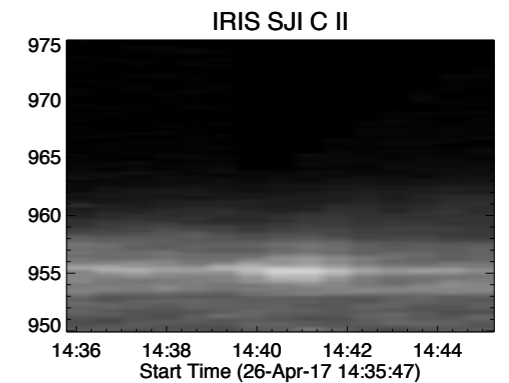
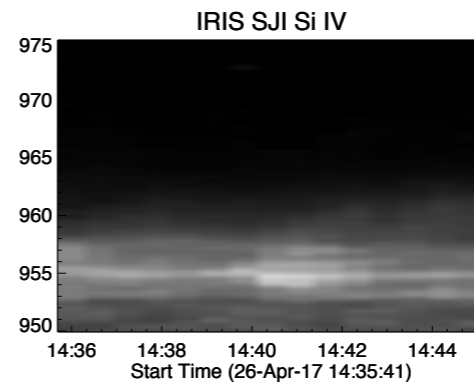
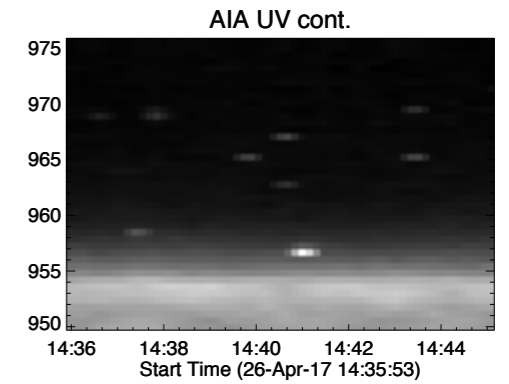
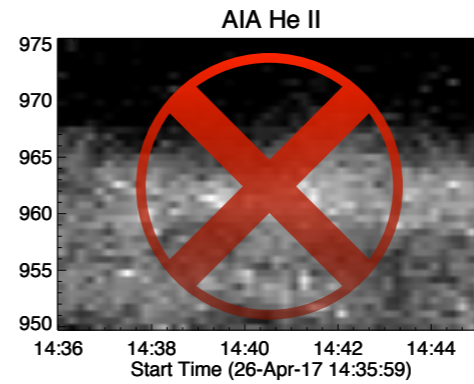
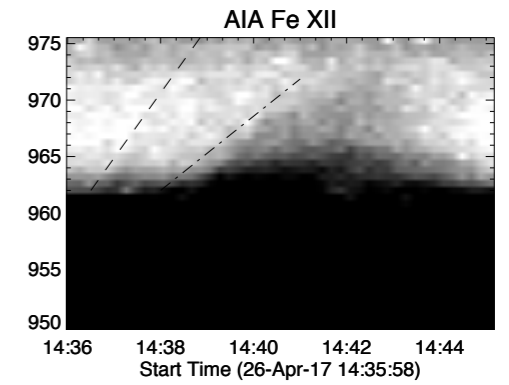
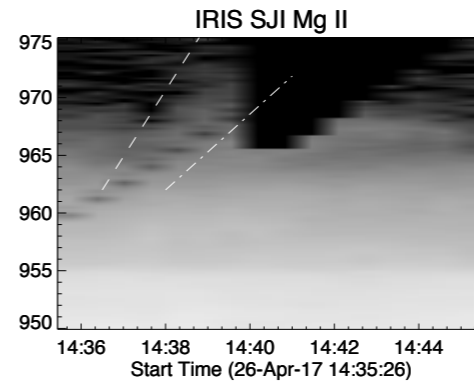
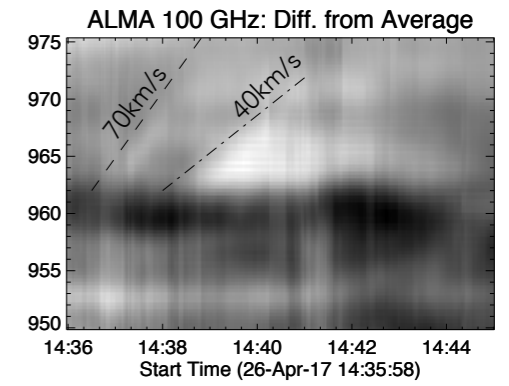
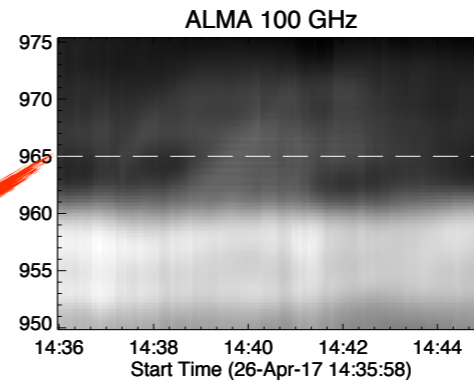
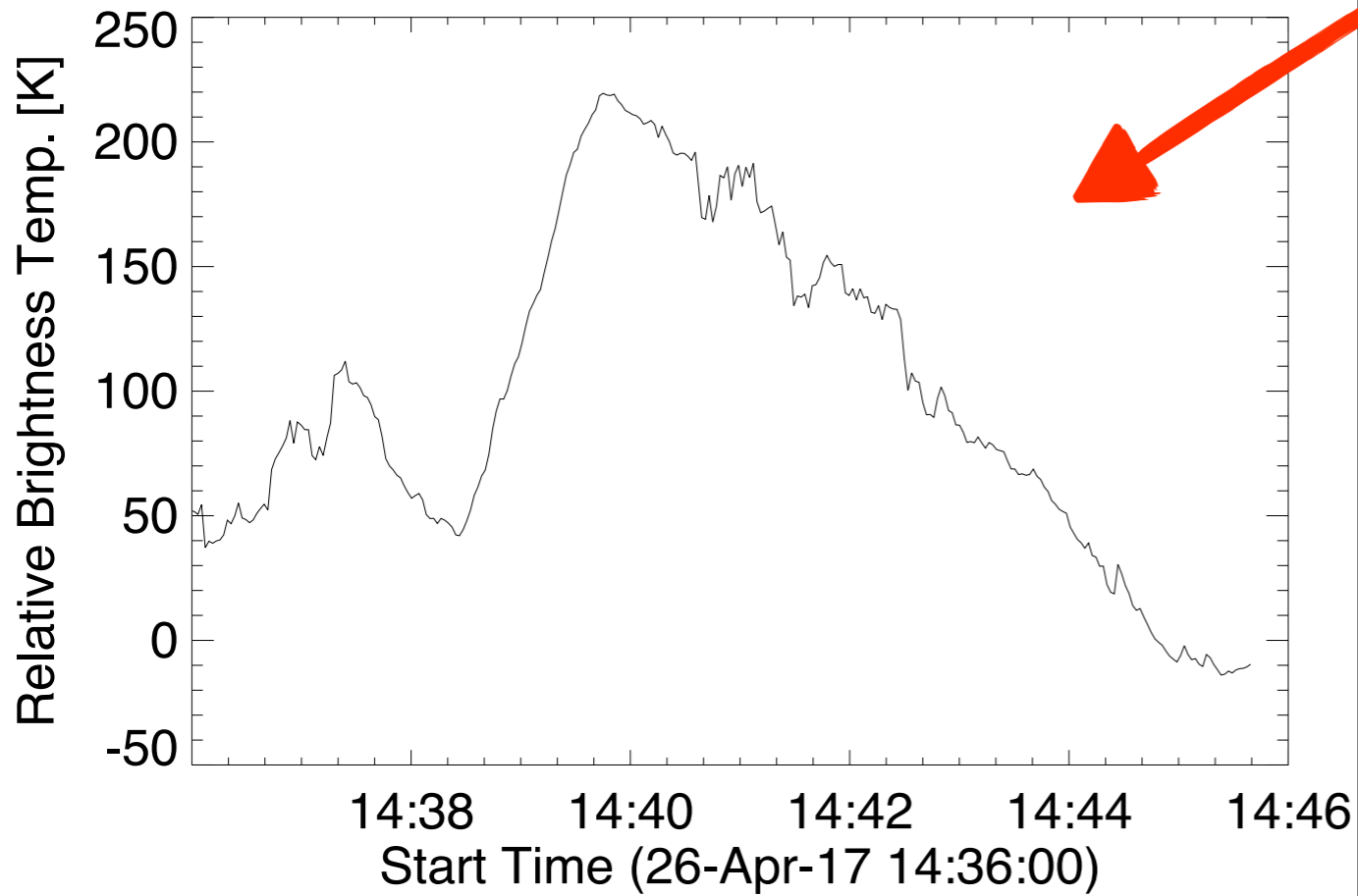
*RefTim: 26-Apr-17 14:35:35.088*



# ALMA-IRIS-AIA MOVIE & TIME-SLICE OF A SPICULE



# TIME-SLICE & TIME PROFILE



# SUMMARY OF MY ACTIVITY IN THE WS

- We found a large spicule in 100 GHz images.
  - Length: ~10,000 km, Apparent Vel.: ~40km/s
    - Enhancement: ~150 K → 100GHz emission from optically thin medium
- I co-aligned ALMA image with IRIS & AIA images, and created the movies and time-slice image.
  - The counterpart of the 100 GHz spicule can be seen in the AIA Fe XII (193) images as an absorbing structure.
  - In the Mg II S.-J. images obtained with IRIS, we can see the spicule at the same location of the 100GHz spicule. However, the start of the Mg II spicule is faster than that of the ALMA spicule.
    - The AIA He II (304) images might show the same properties, too.
  - The 100 GHz spicule is not significantly in the Mg II images. We can see the other spicules around the 100 GHz spicule.
  - In 100 GHz images (and maybe in AIA 193 images), the rising bright blob can be seen just before the 100 GHz spicule. The velocity of the blob is about 80 km/s.

We can see ONLY  
**cool and/or dense** (and Large) spicules  
in ALMA 100 GHz image?