Initiation and early development of the 2008 April 26 CME

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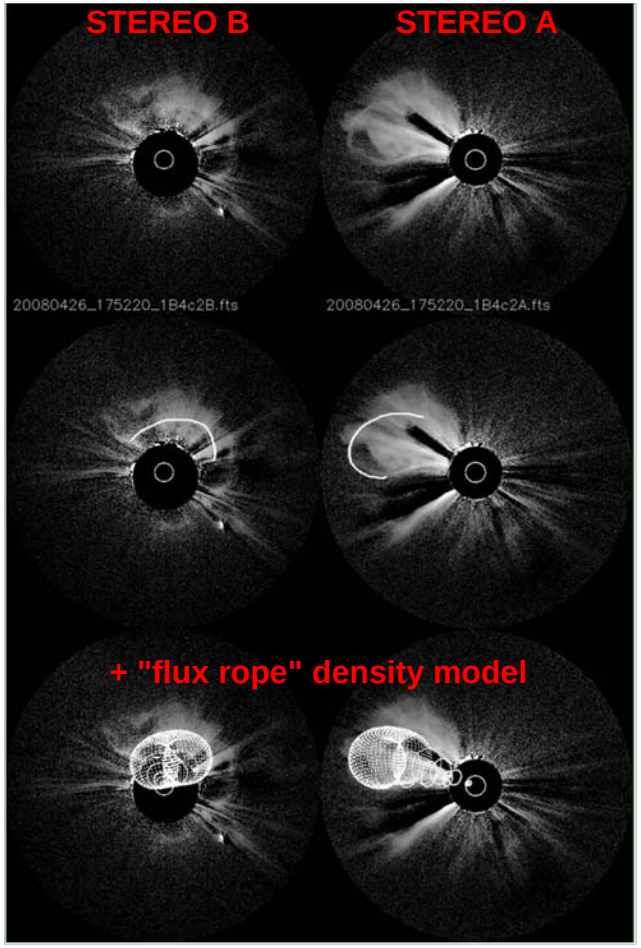
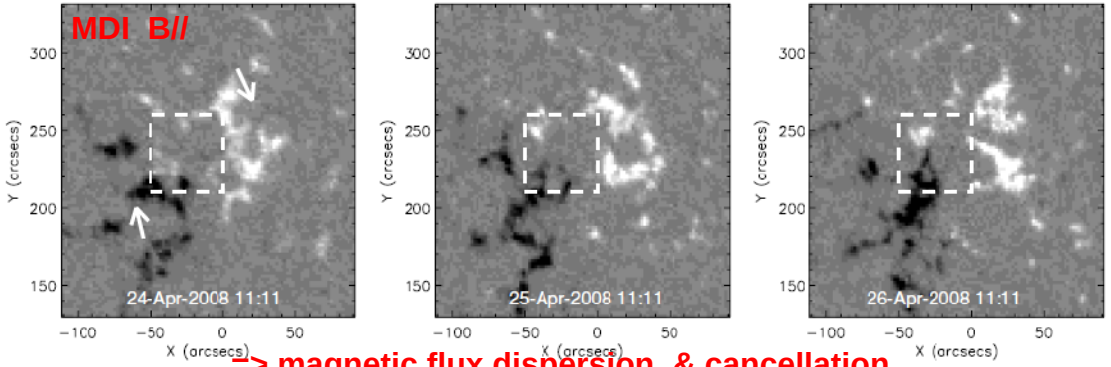
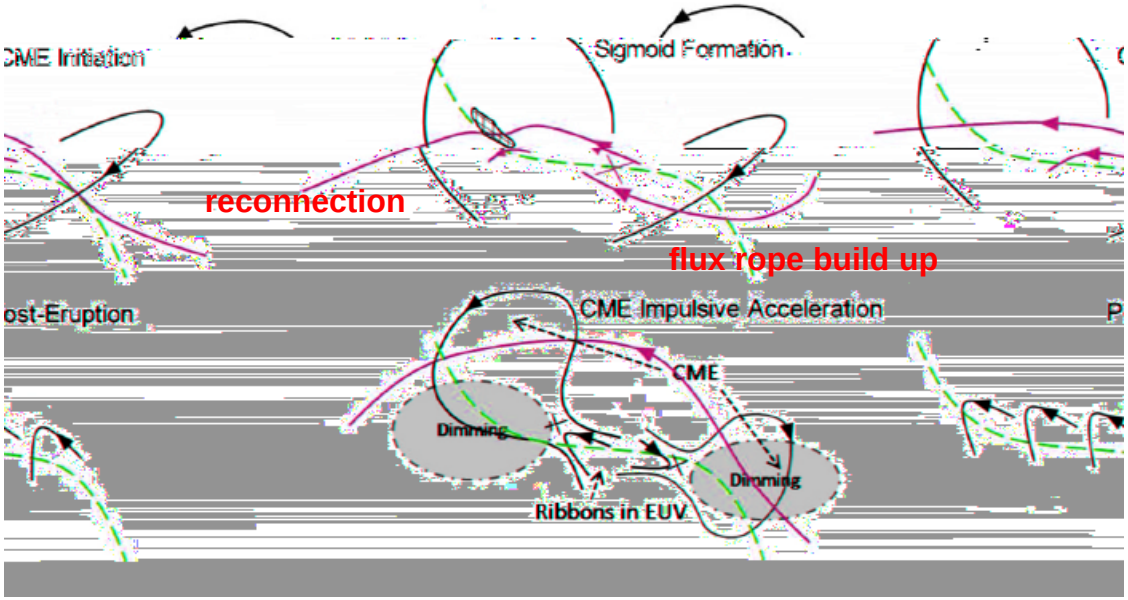
Introduction:

2008 April 26 event





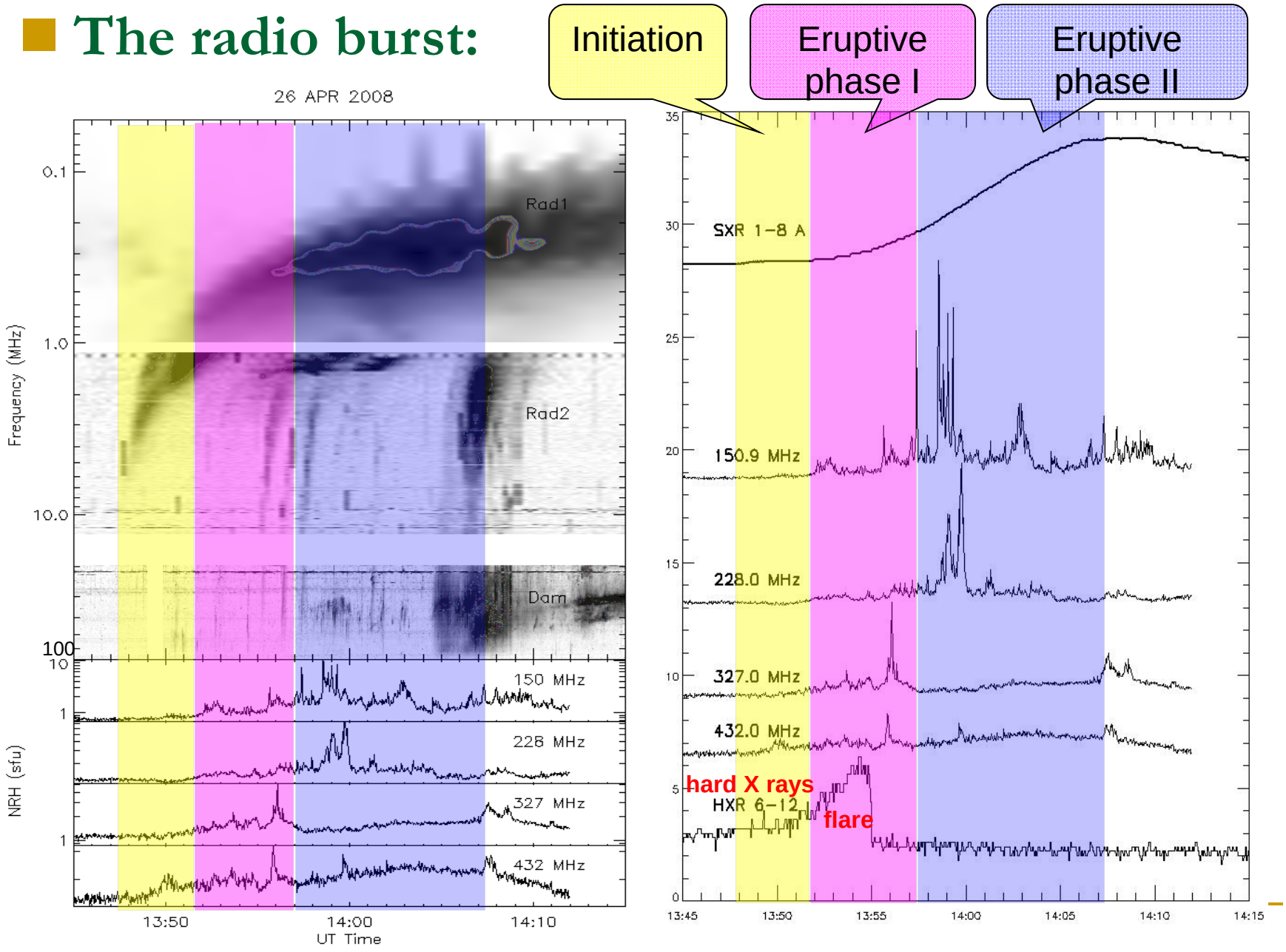
=> magnetic flux dispersion & cancellation



(Thernisien et al. 2009, Wood et al. 2009)

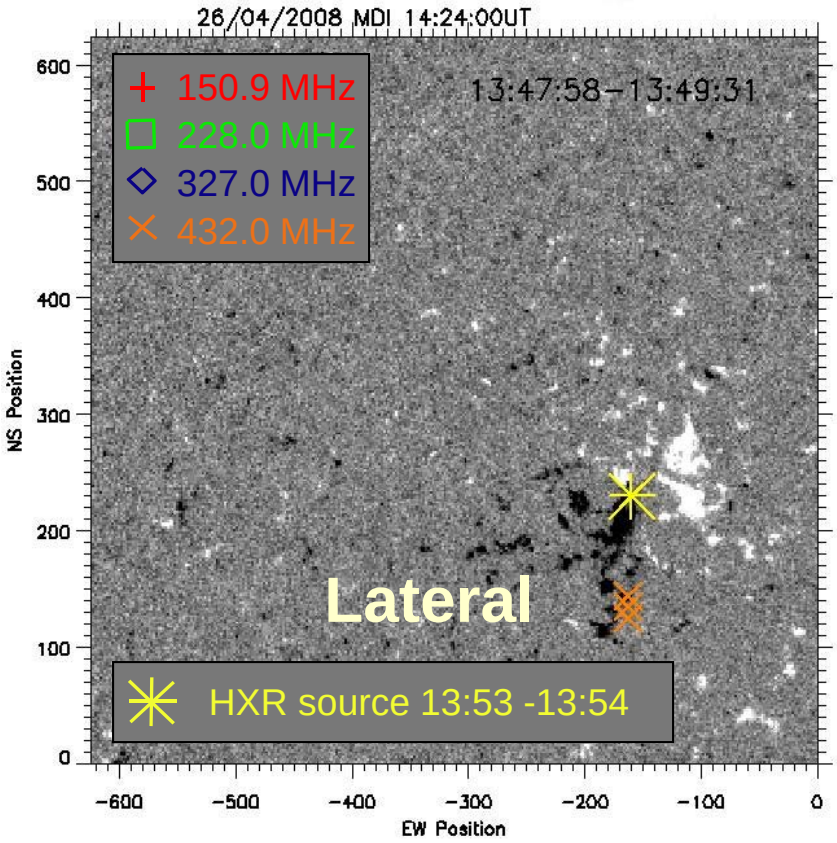
(Cheng et al. 2010)

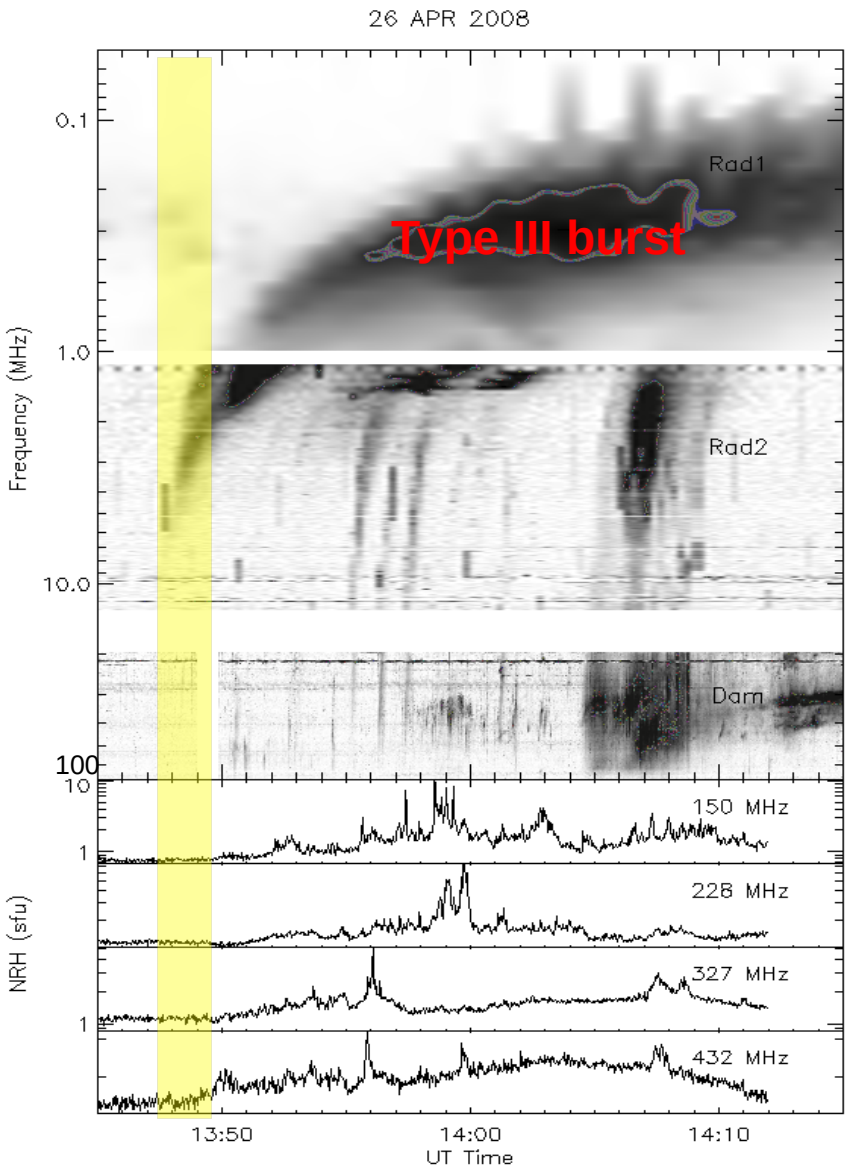
The radio burst:

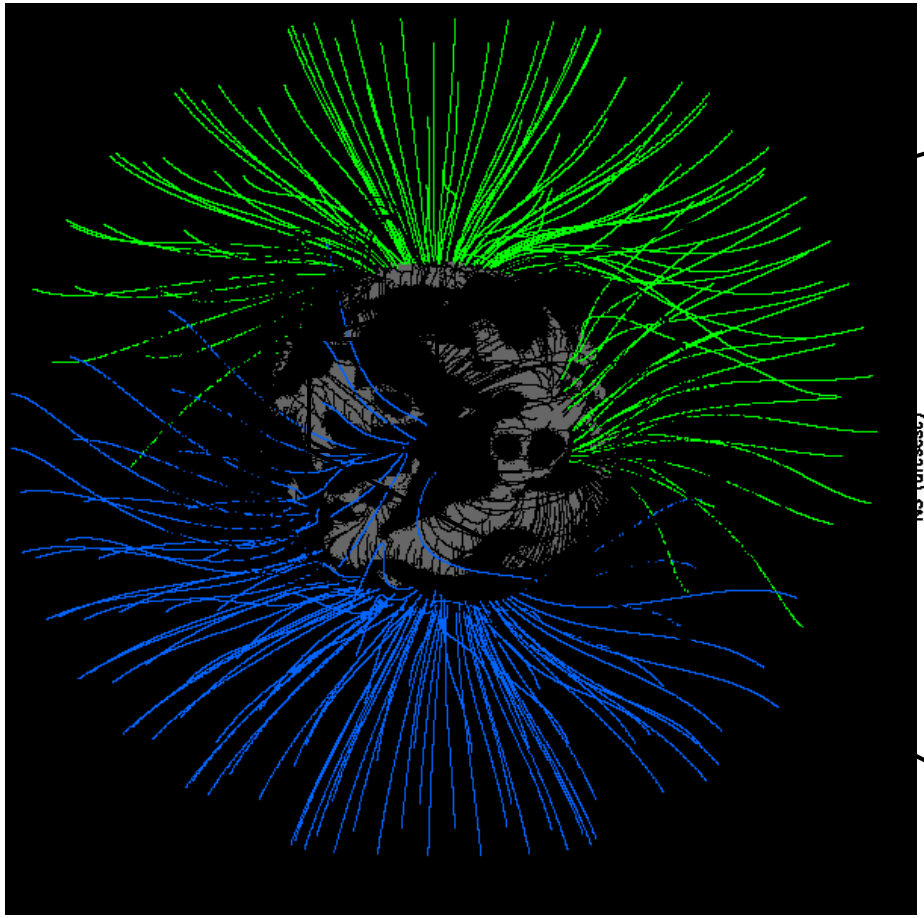


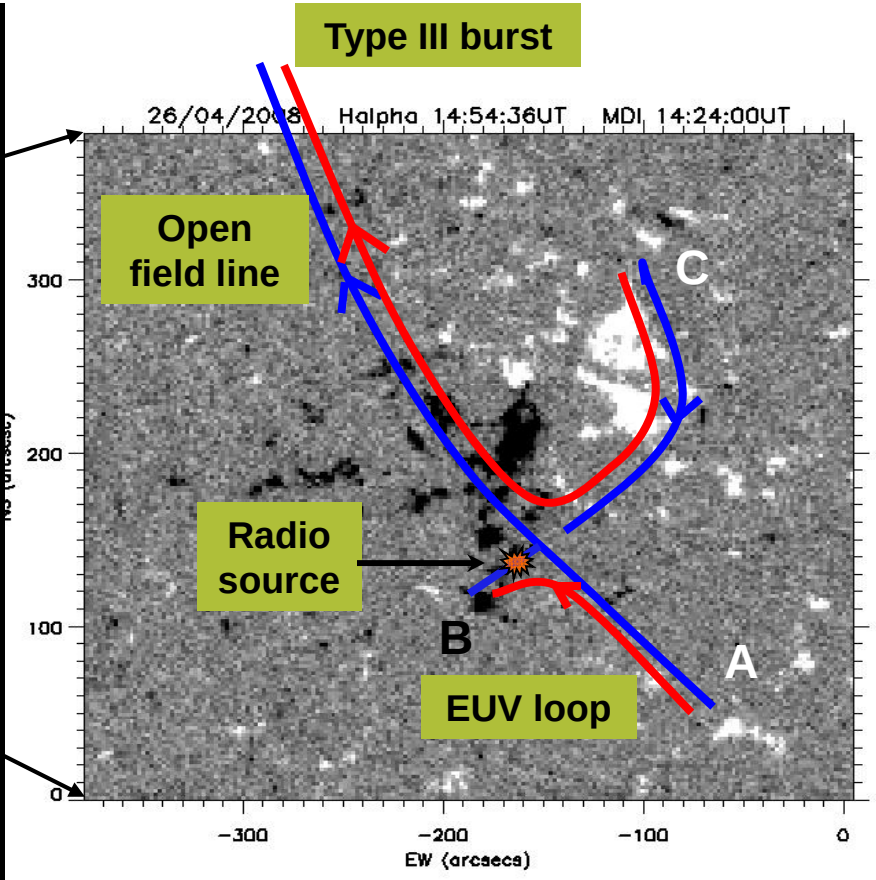
Initiation I:

- 13:47:58-13:49:31









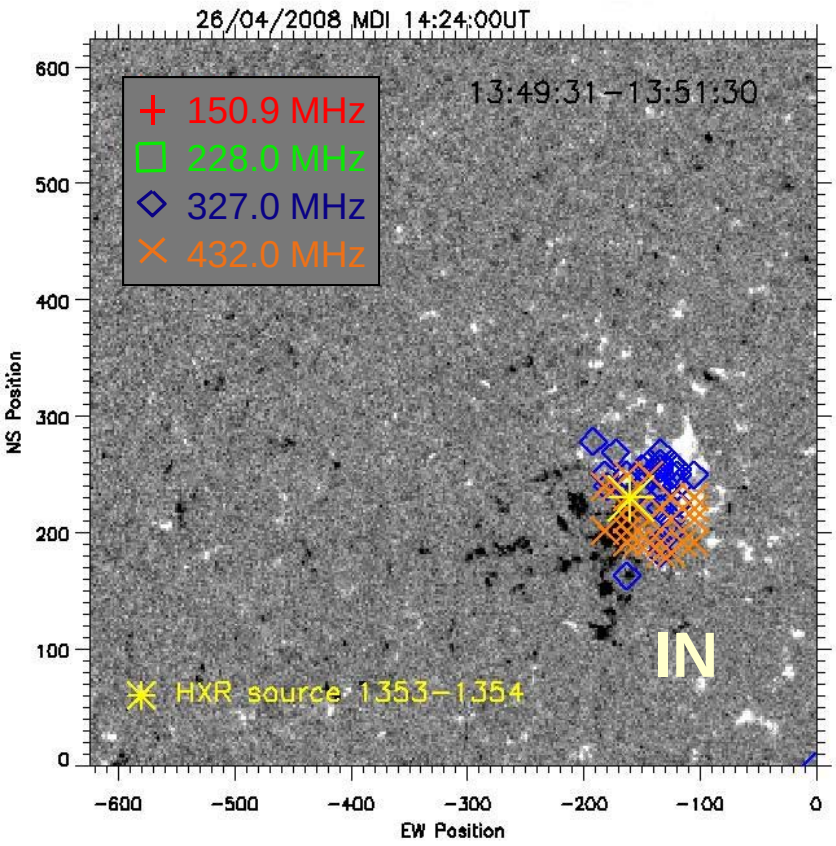
before reconnection

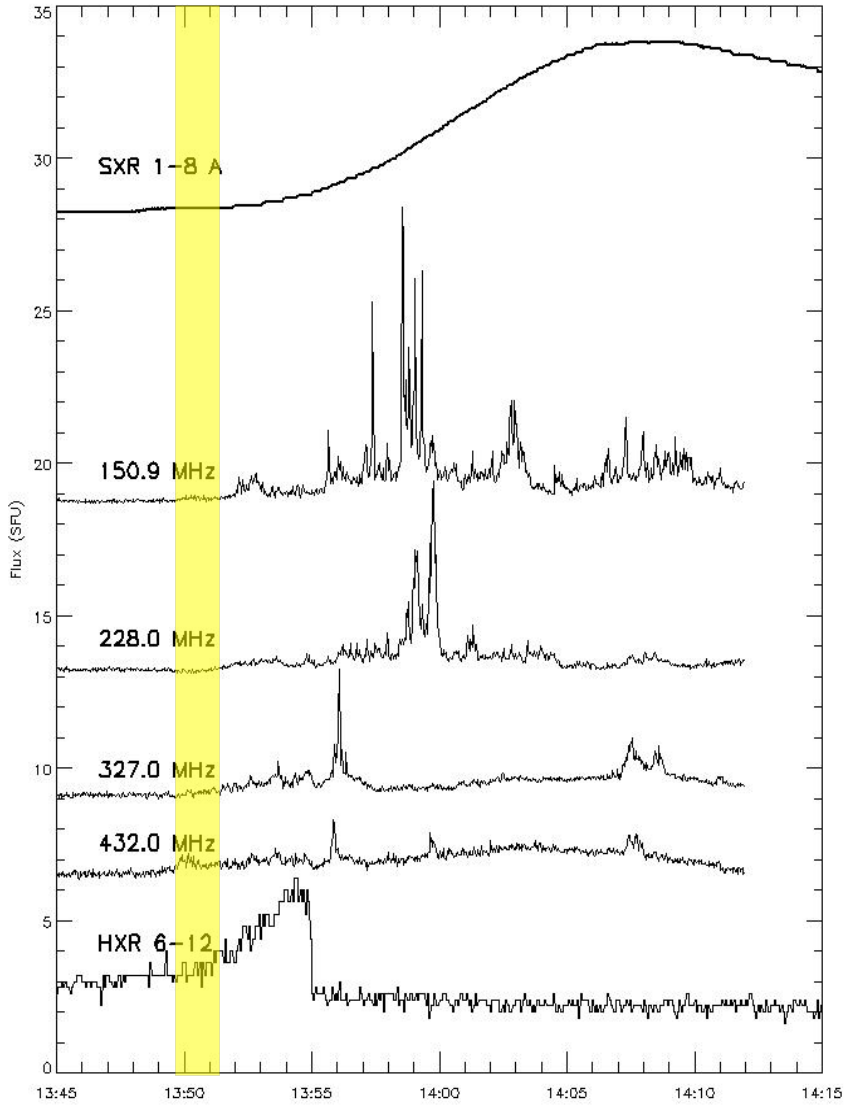
after "

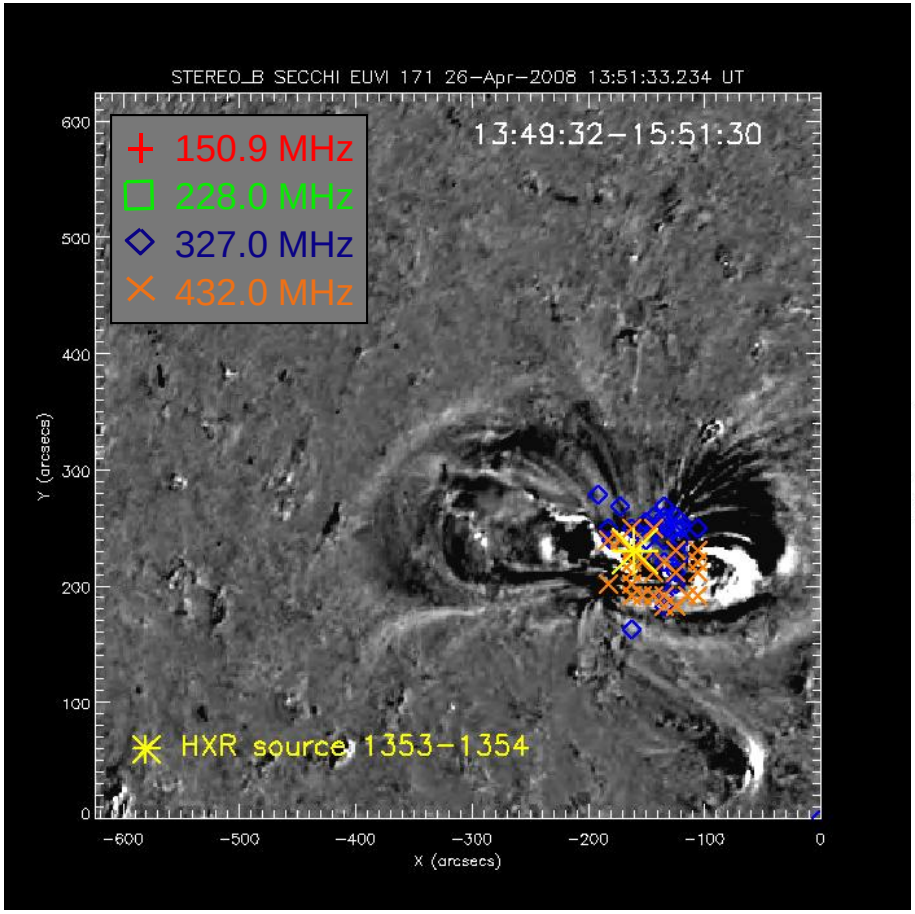
Yiming Wang

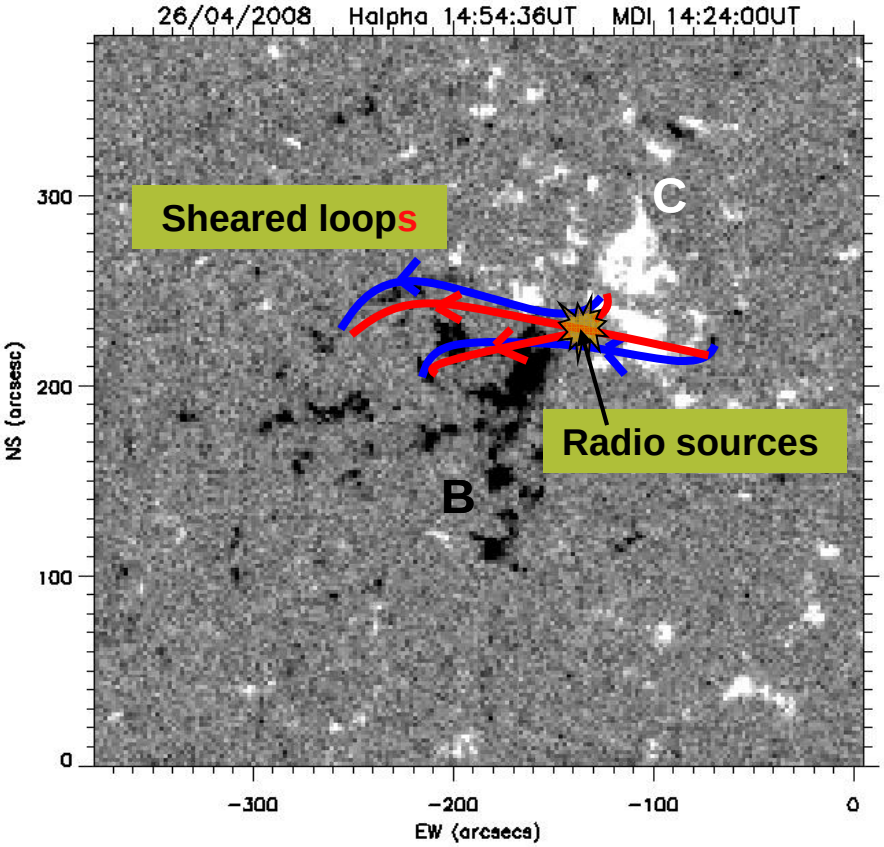
Initiation II:

- 13:49:31-13:51:30







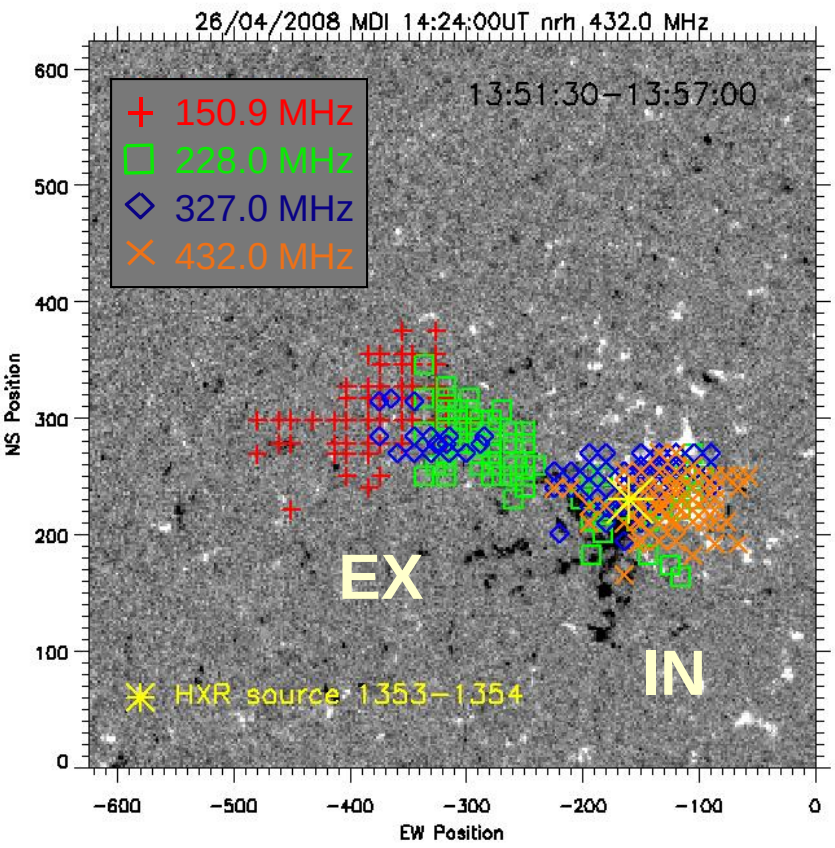


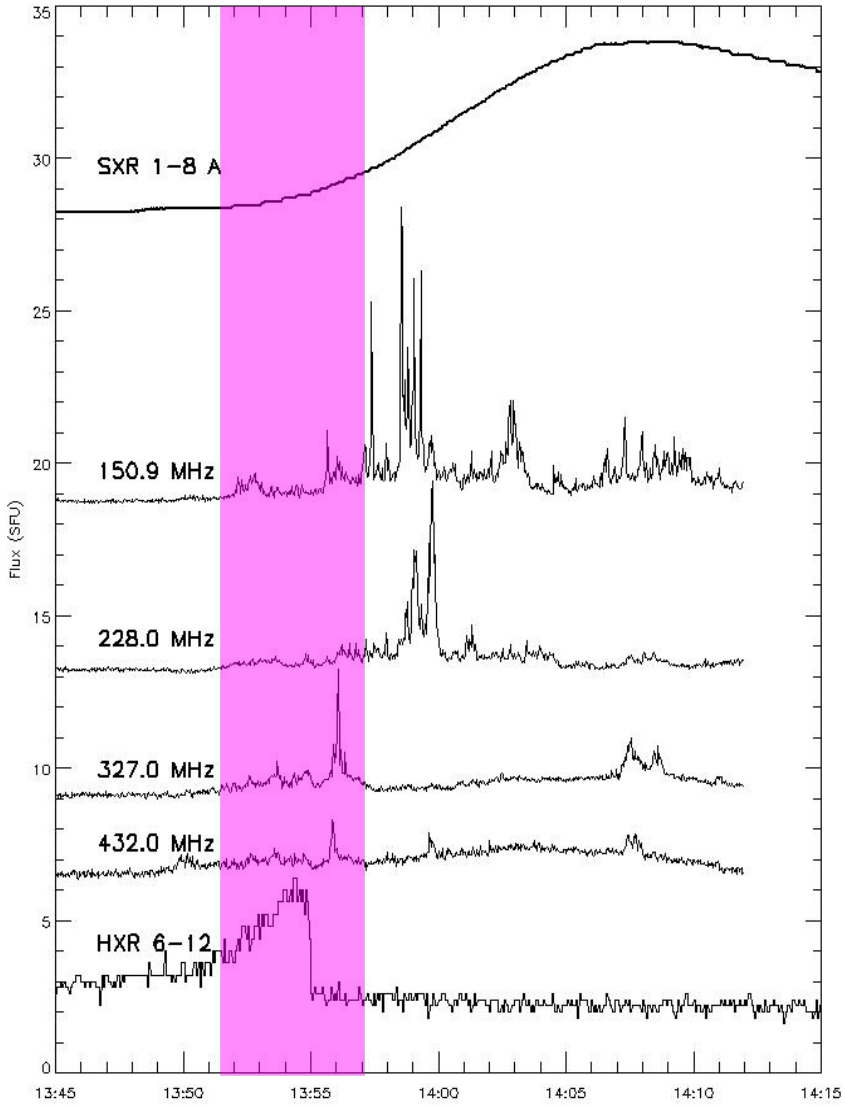
before reconnection

after reconnection

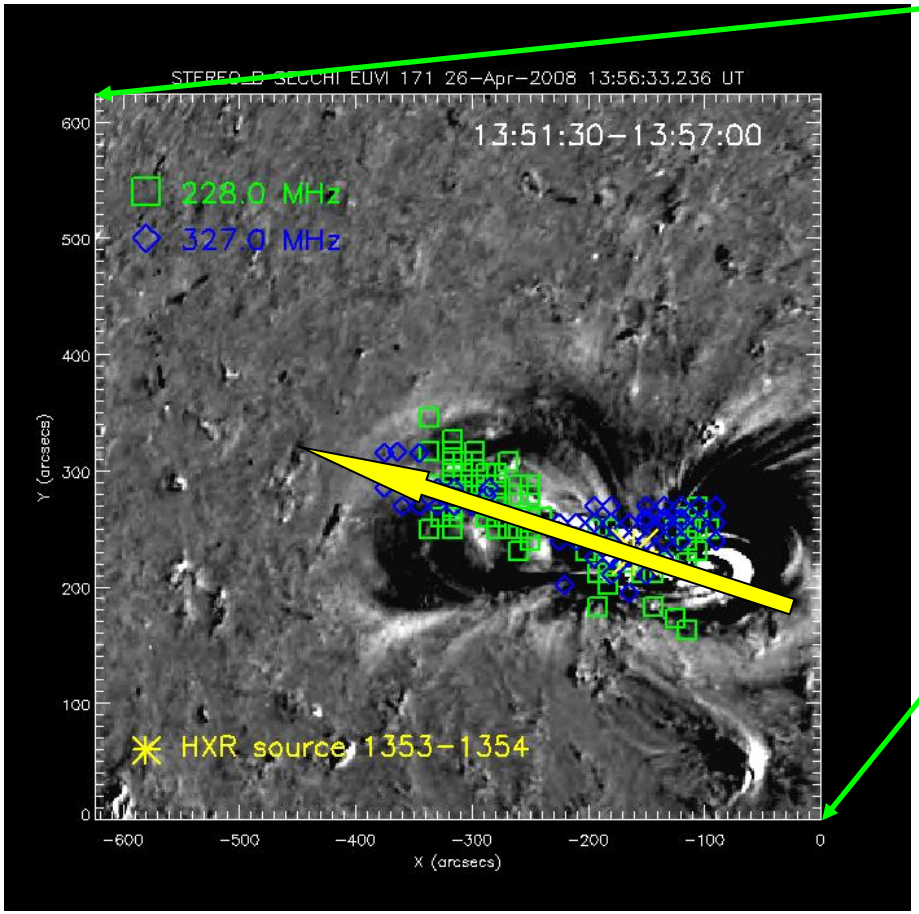
Eruptive phase I:

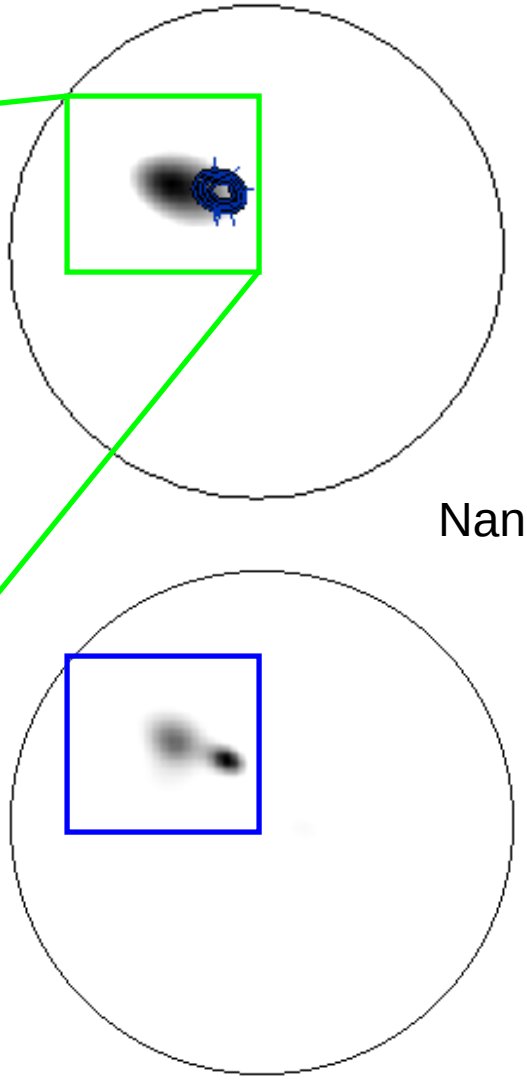
- 13:51:30-13:57:00





228 MHz 13:55:36 13:55:42

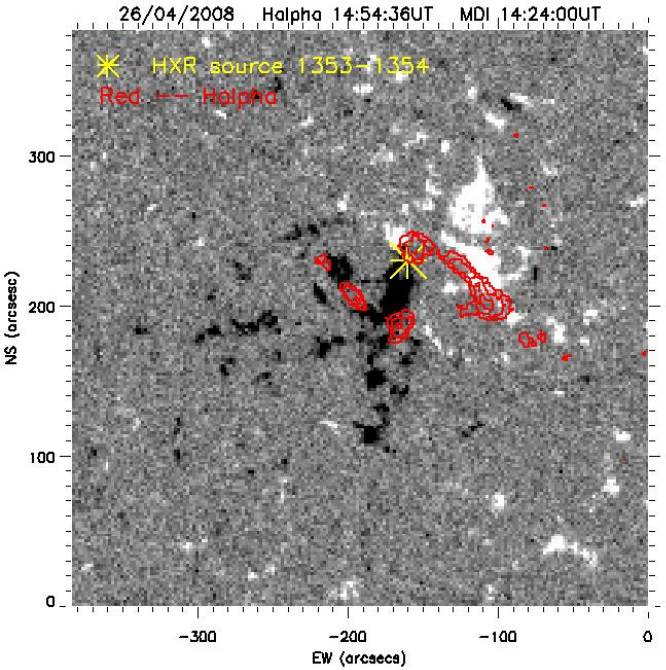


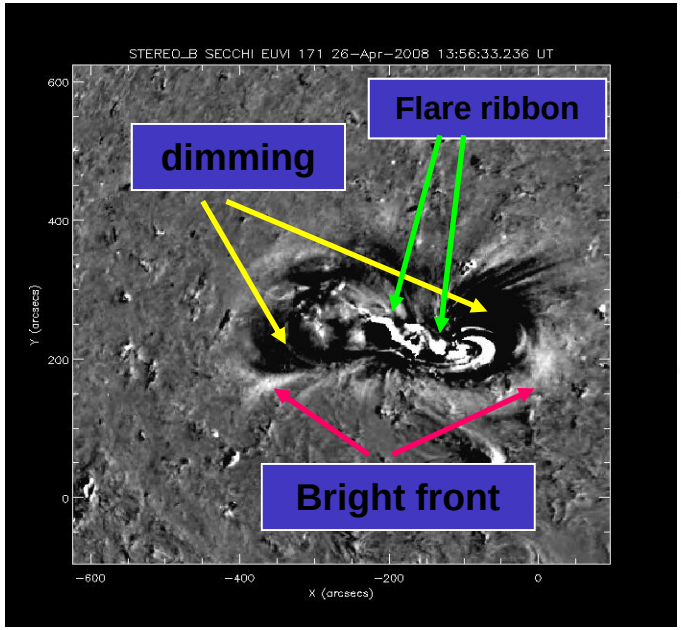


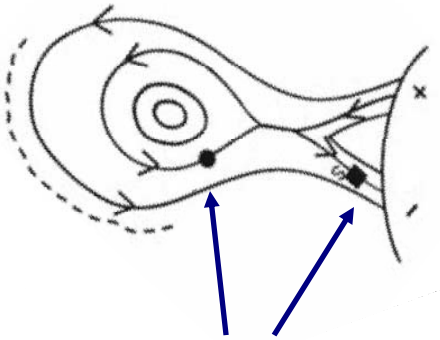
Nancay

The double sources and dimmings indicate the direction of the flux rope.

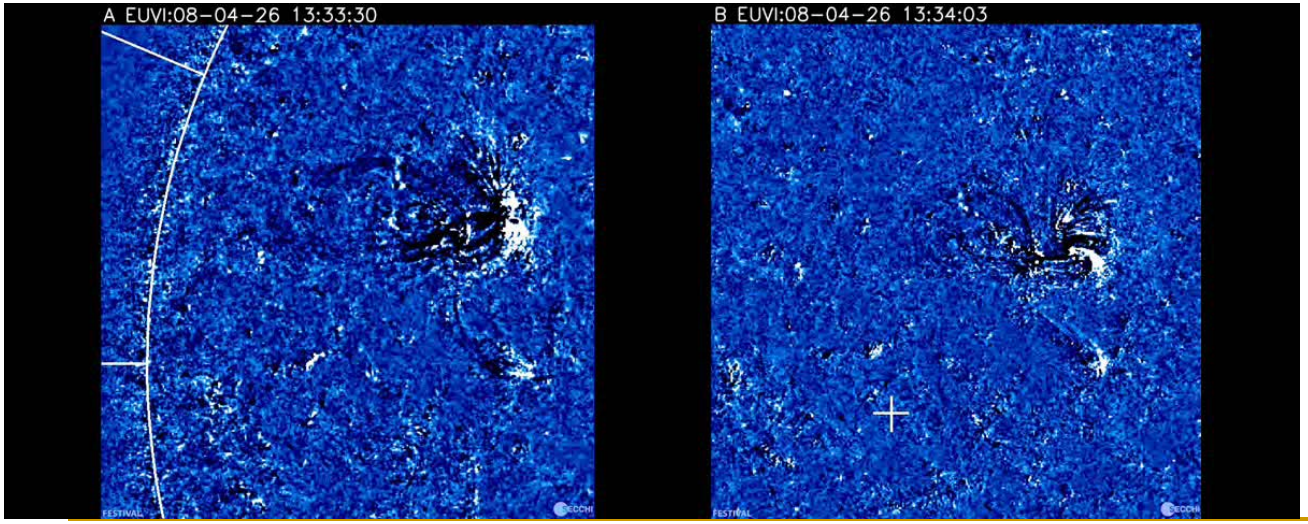
327 MHZ 13:52:26





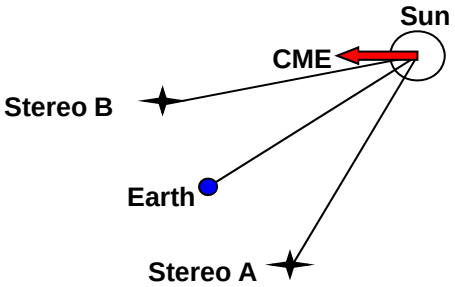


Double radio sources



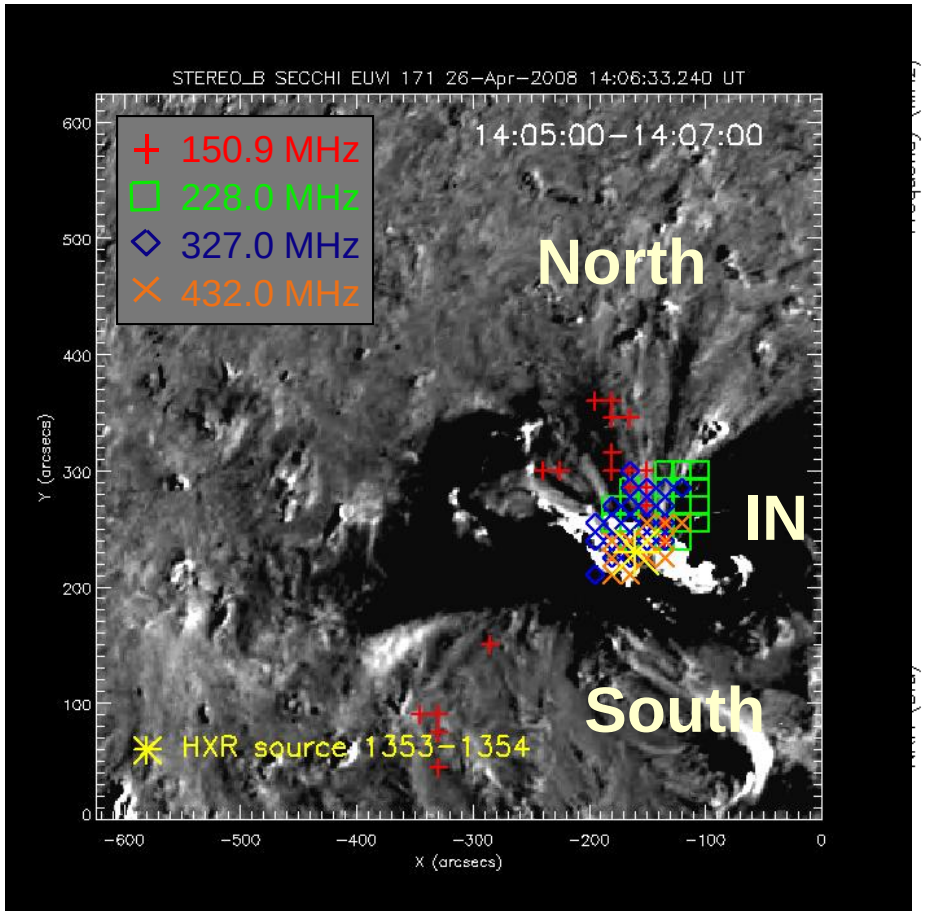
Stereo A

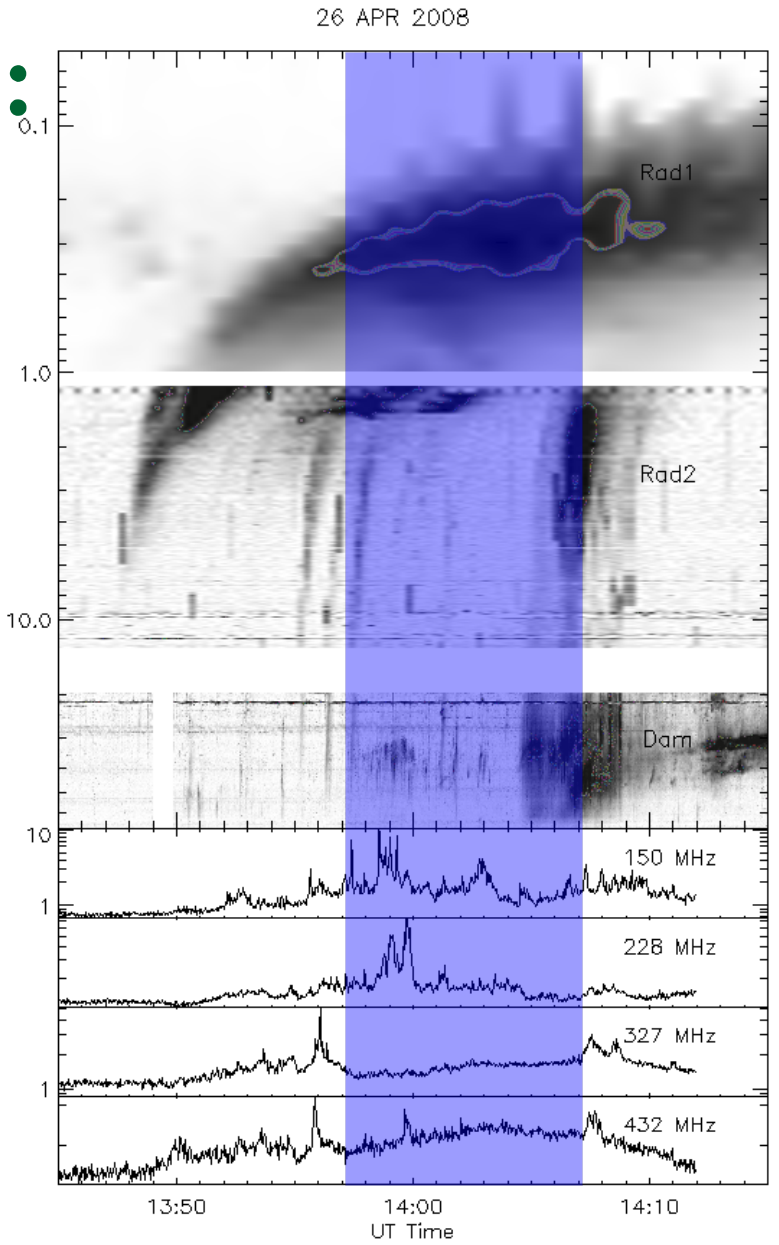
Stereo B



Eruptive phase II:

- 13:57:00-14:07:00





Summary:

- Initiation I (13:47-13:50)

  The lateral source: traces reconnection with open field line => type III burst
  => reduction of the downward magnetic tension

- Initiation II (13:50-13:51)

  The IN source: new reconnection of sheared loops occurred over the PIL
  => build up of the flux rope

- Eruptive phase I (13:51-13:57)

  The IN source (over PIL): energetic electrons in the flare-loop top
  The EX source (over dimming): energetic electrons at the flux-rope bottom
  gives the direction of the eruptive flux rope

- Eruptive phase II (13:57-14:07)

  The south and north sources: preceding the EUV bright front
  trace the expansion of the flux rope