

# Capabilities of coordinated white-light and radio wave observations

Stereo meeting, Hamburg, 1-4 May 2005

M. Pick,

# A new web site for radio monitoring

M. Pick, M. Maksimovic, J. L. Bougeret, A. Lecacheux,  
R. Romagnan and A. Bouteille  
LESIA, Observatoire de Paris

## Why a web site for radio monitoring ?

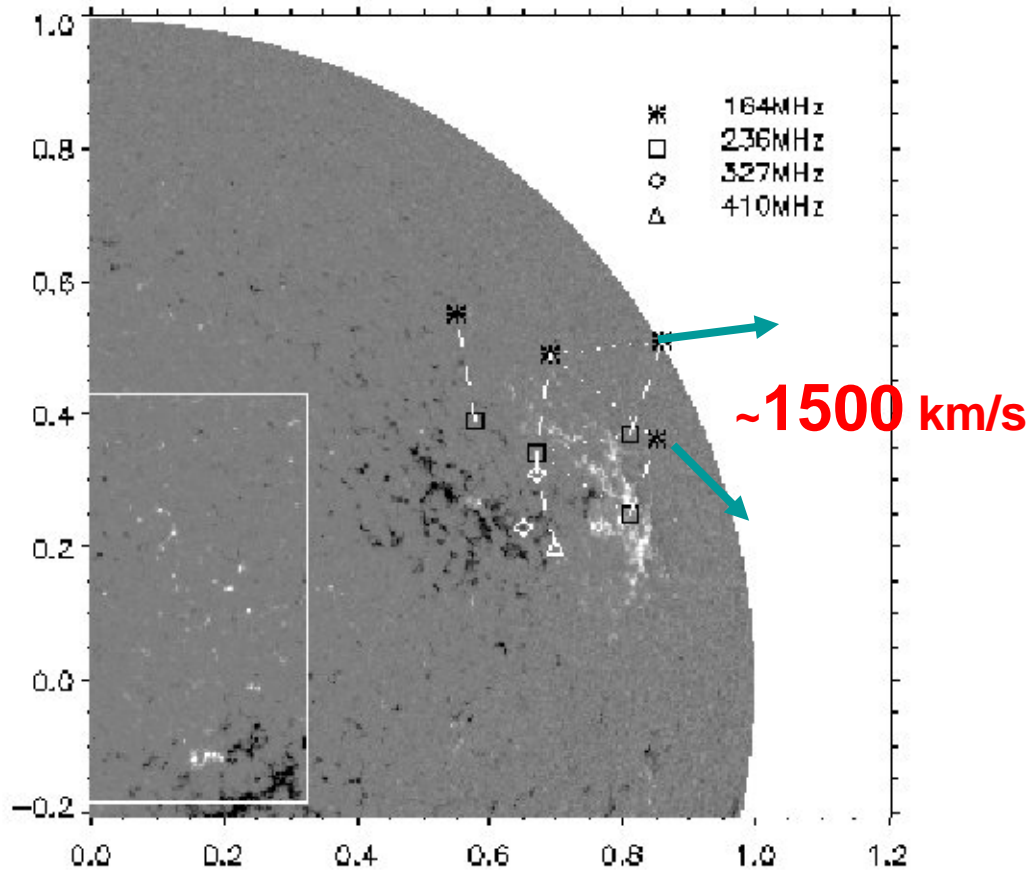
Main objectives

- Radio associated with CMEs, onset, development
- Electron beams from the low corona to the interplanetary medium

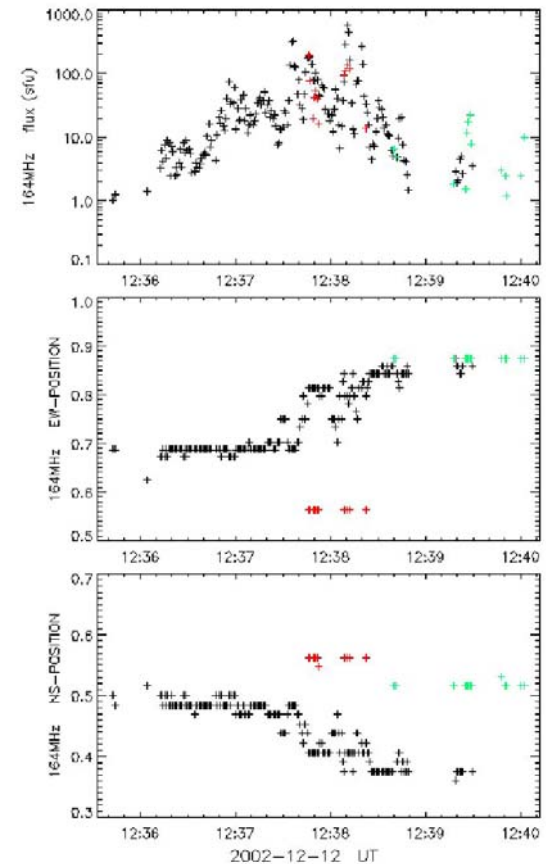
## Web site under construction

- will not include microwave data
- will include dm-km data
- **SECCHI CME summary** (R. Howard, A. Vourlidas)
- links with other web sites

# Fast narrow CME 12 December 02

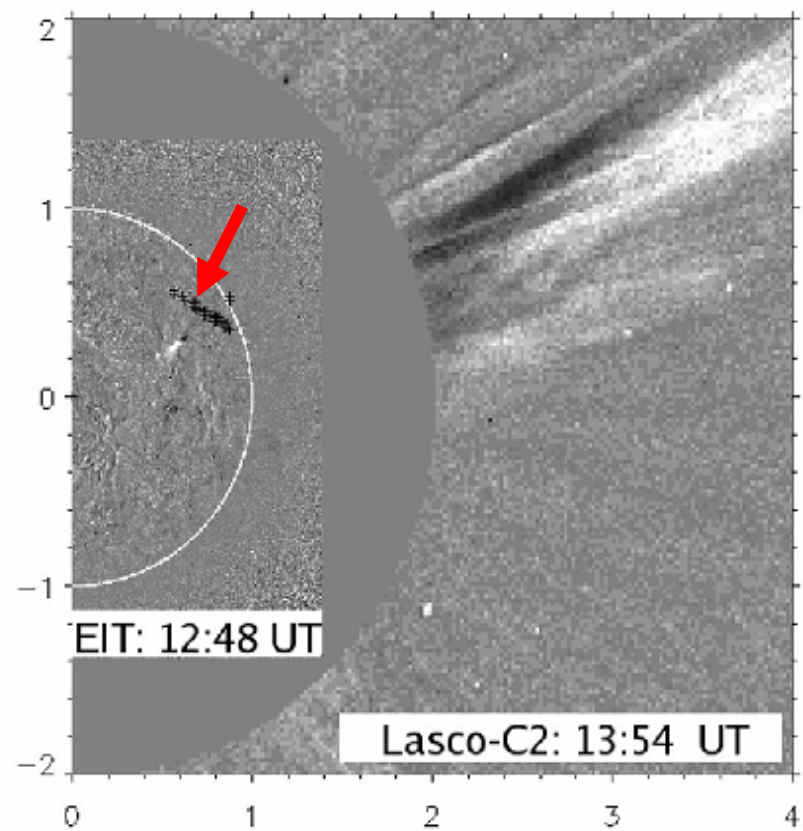
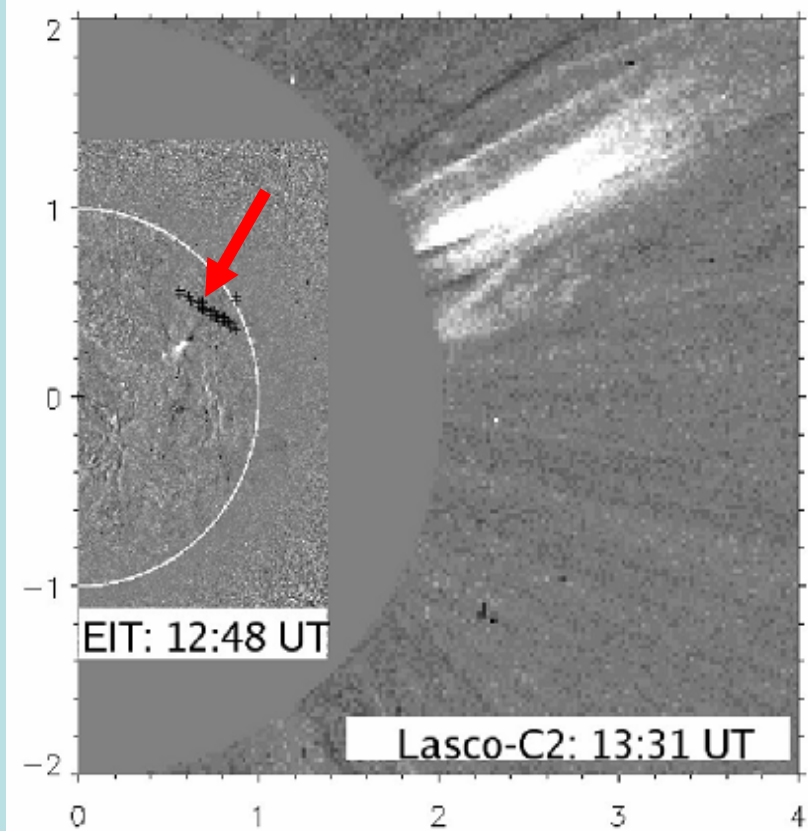


12 Dec, 2002 UT



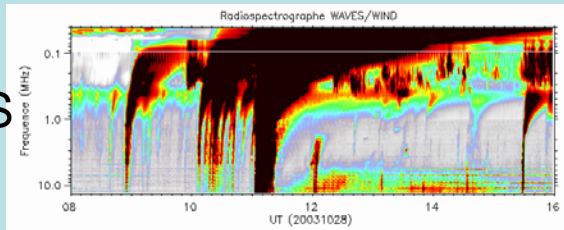
NRH 12:36-12:40 UT  
Cadence 10s, 1s  
Solar soft

# 12 December 2002

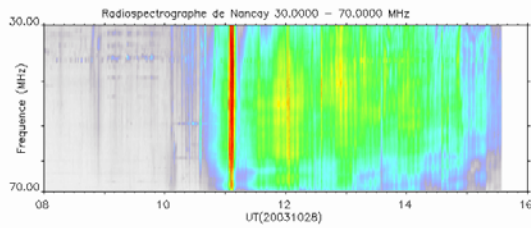


# 28 October 2003

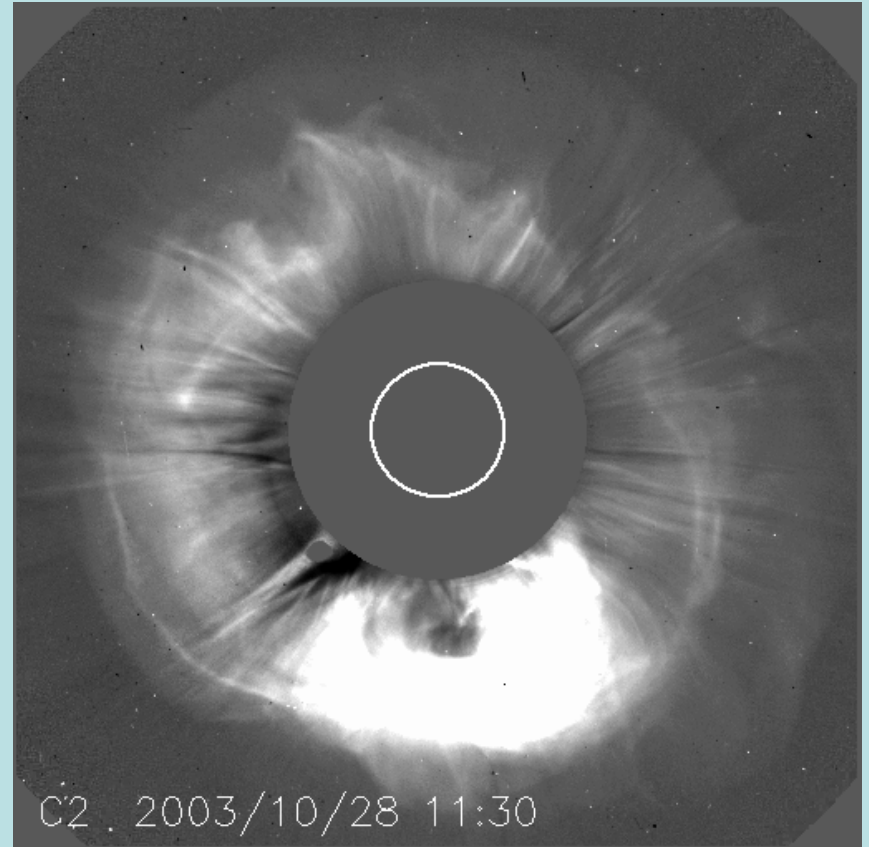
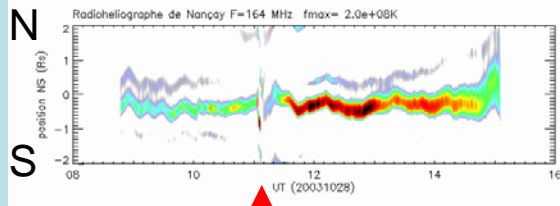
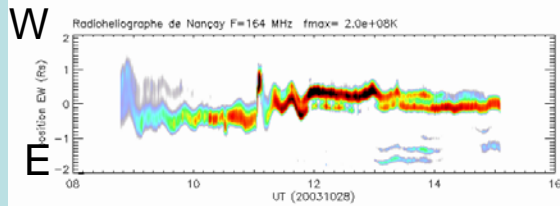
WAVES

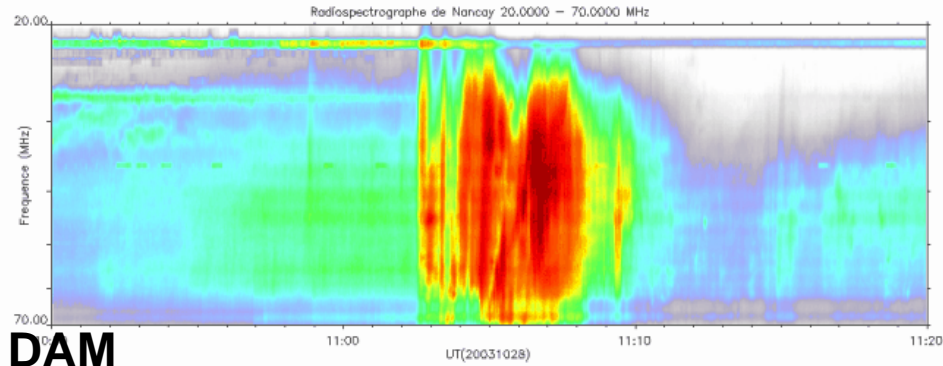


DAM

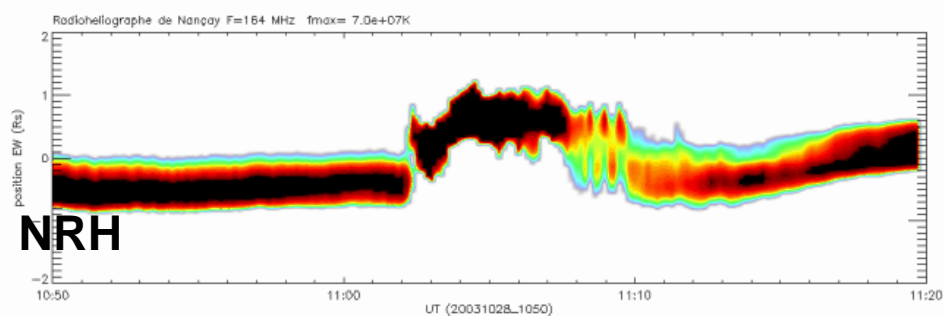


NRH

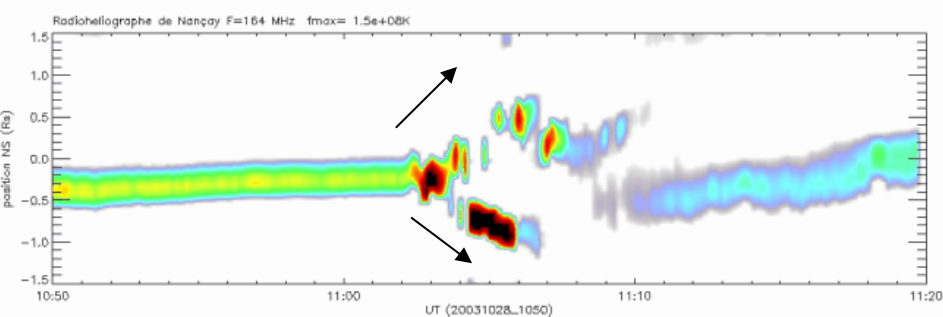




DAM



NRH



NS

# Fast wide CMEs

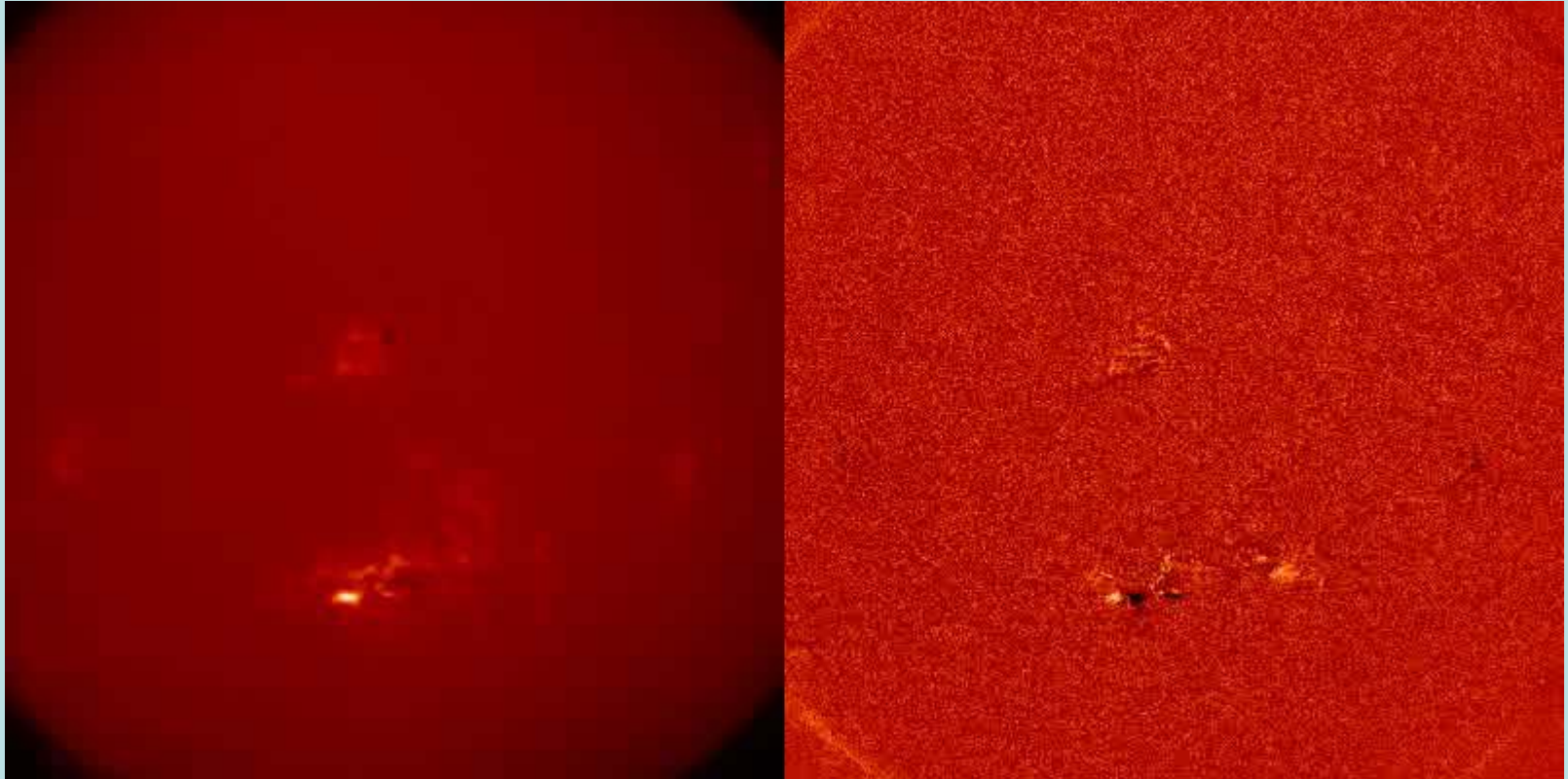
## On-Disk development

28 October 2003

Radio sources **spread**, suggest a disturbance  $V \sim 2500$  km/s  
**24** events (NRH observing time 1996-2000) **spreading**  
 (May 02 1998, association with **Moreton wave**,  
 Pojholainen et al., 2001, ApJ)



Heliograph H $\alpha$  «  $\lambda$  variable » de Meudon  
Cadence 1 mn with 3  $\lambda$

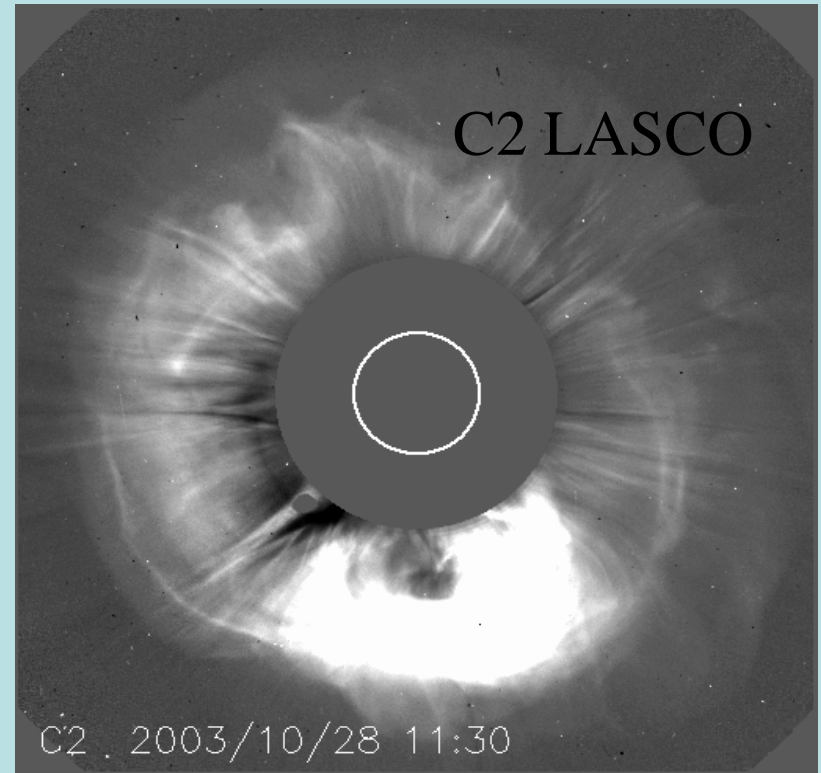
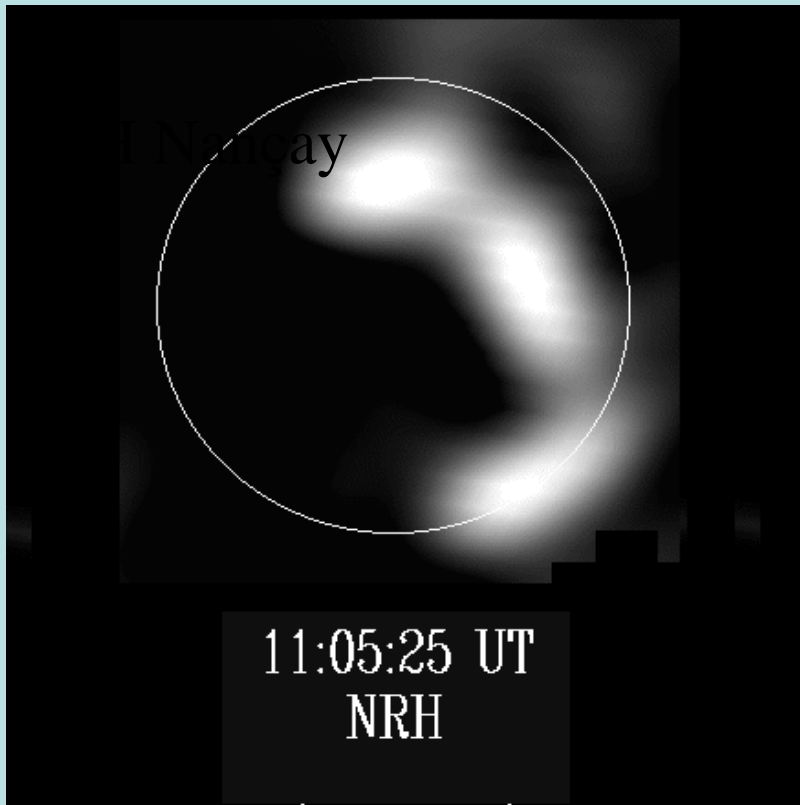


*Intensity center of line*

*Running differences*

**28 Octobre 2003**

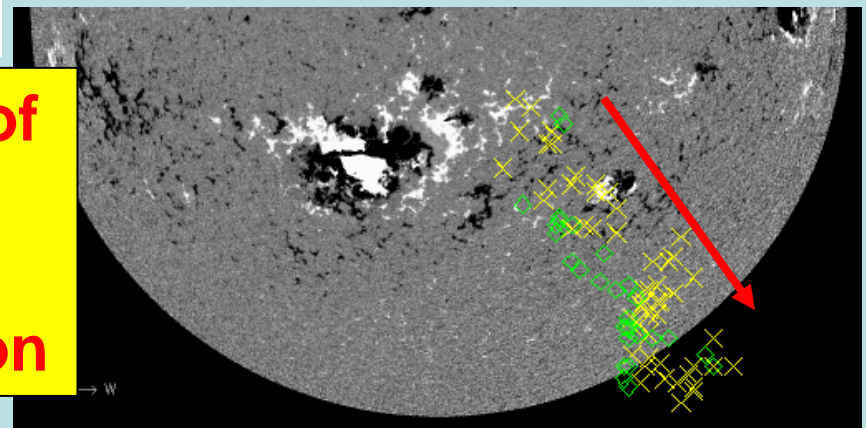
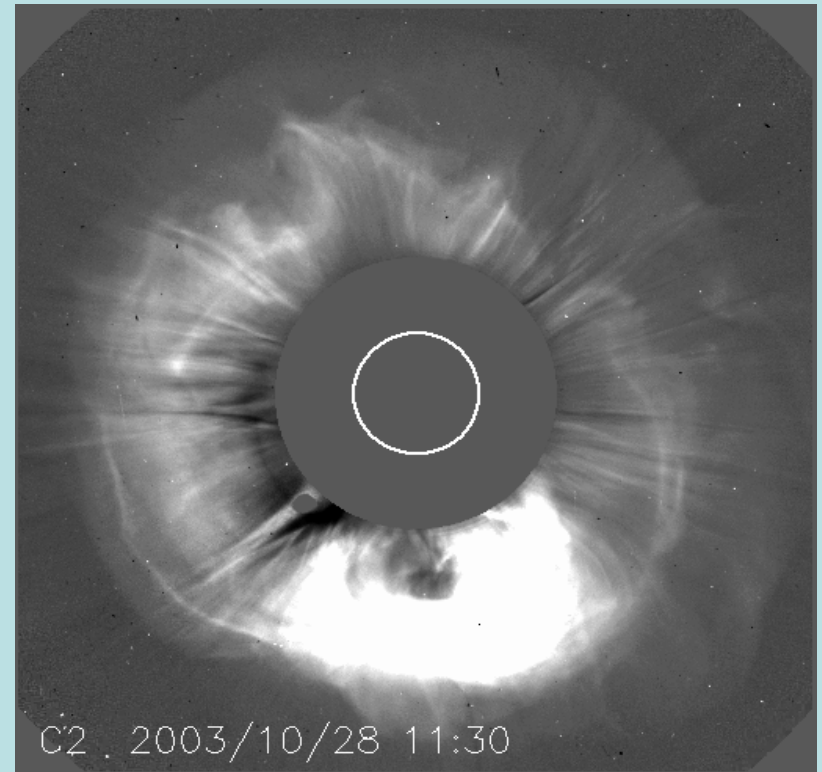
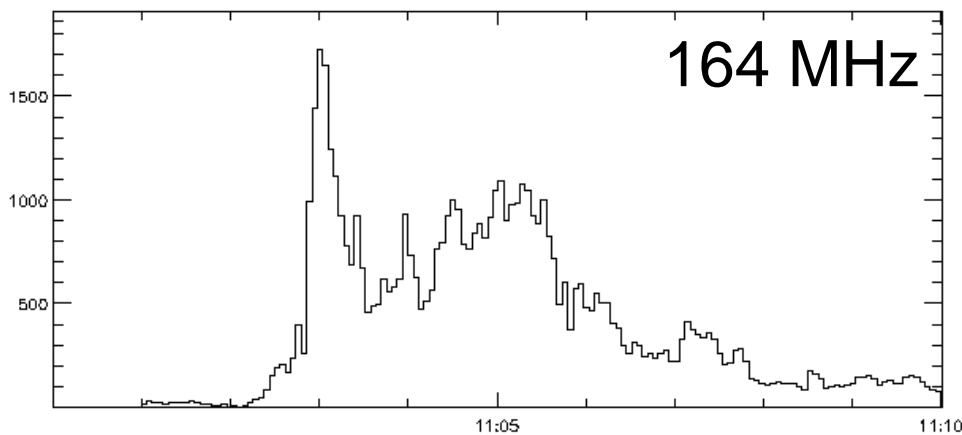
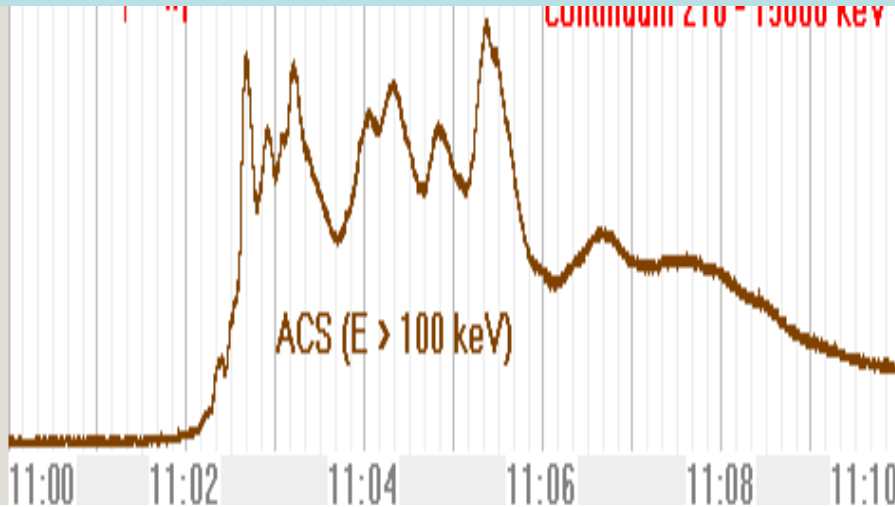
# October 28 2003 Onde de Moreton et CMEs



## Radio imaging at 164 Mhz

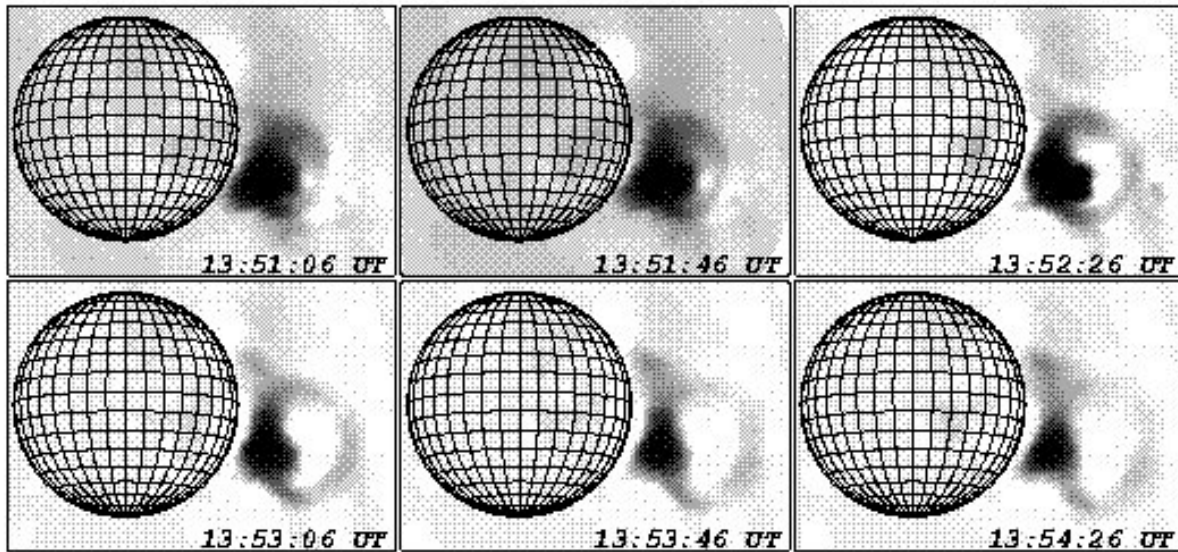
- traces the CME development and the regions of B interaction
- The coronal wave and the CME encompasses most of the solar disk





- Electrons trace the expansion of the arch system (~2500 km/sec)
- Coronal wave develops along flank of CME in lateral expansion

# Radio CMEs



Web page

# Concluding remarks

- Weekly deliver
  - NRH clean images
  - Image 10 ko
- Work
  - S-Waves
  - Other radio spectrographs ?
  - Survey (composite) 1997-to-day