EU Horizon 2020 Marie Sklodowska-Curie Actions grant agreement No 745782 (project ForbMod).

3D CME reconstruction using GCS method

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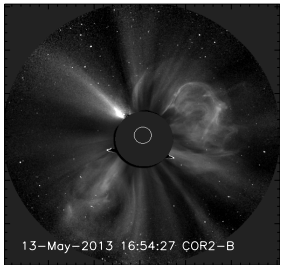
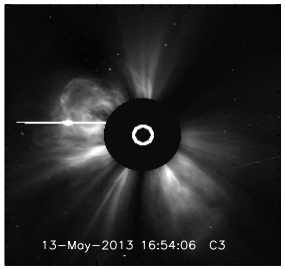
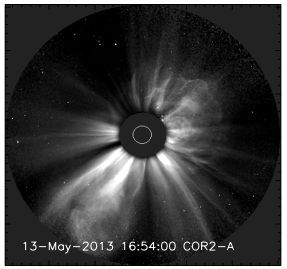
Institute of Physics, University of Graz

GCS=Graduated Cylindrical Shell

Thernisien+2006,2009; Thernisien2011







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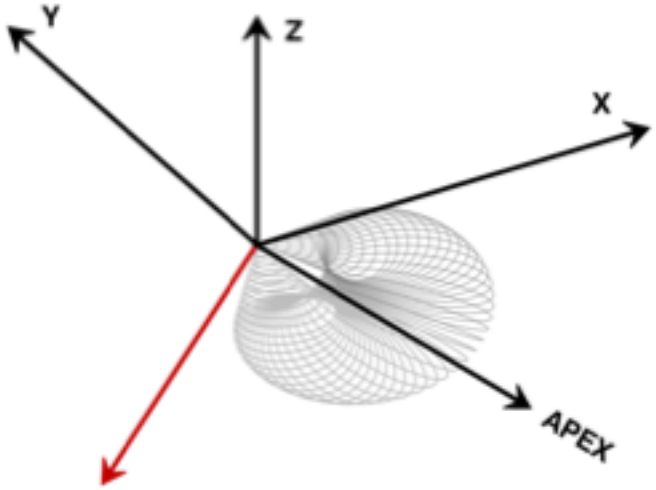

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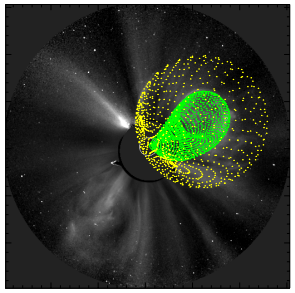
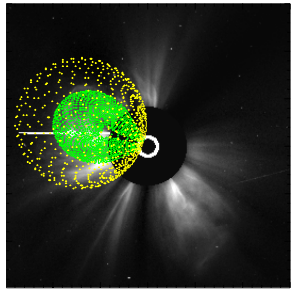
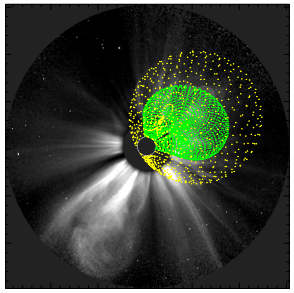




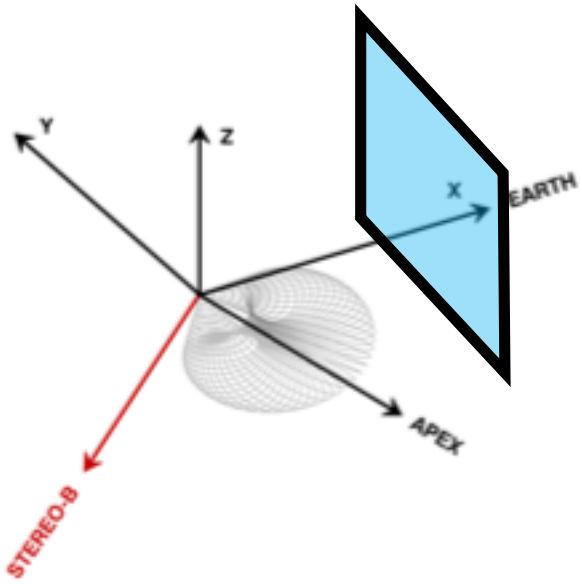


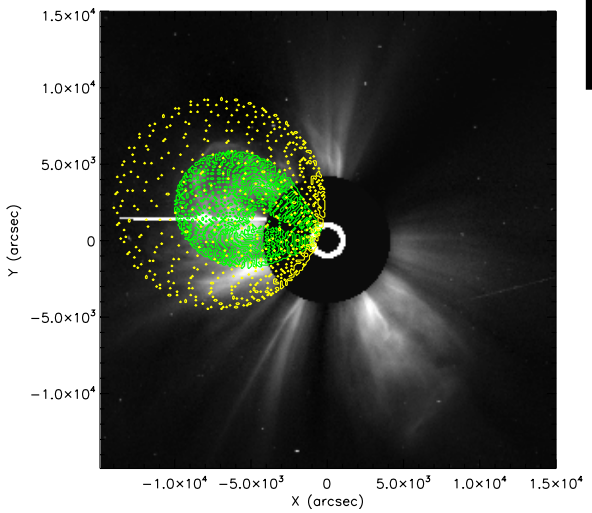
2D WL CME image
>1 vantage point!

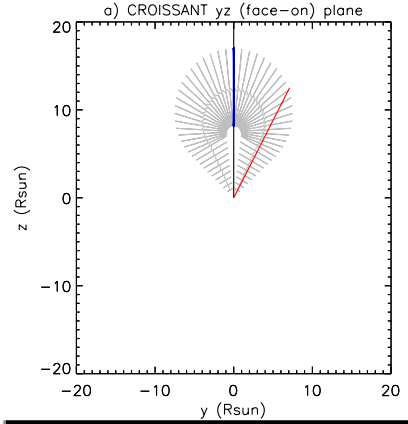
3D croissant geometry

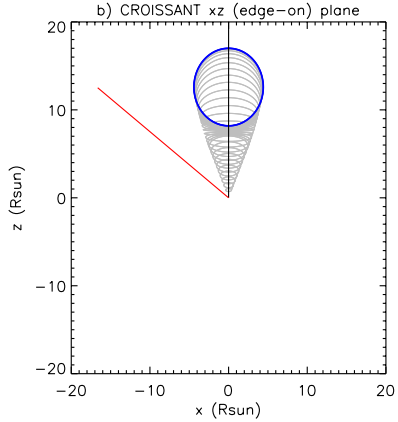
3D CME reconstruction

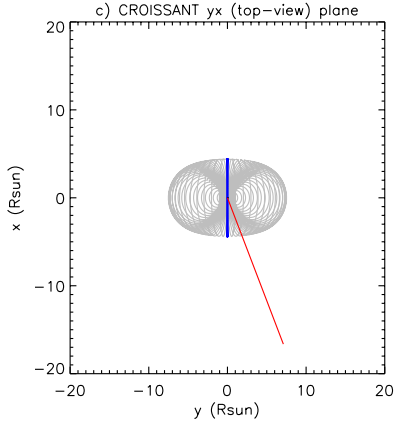
3D CROISSANT → 2D IMAGES

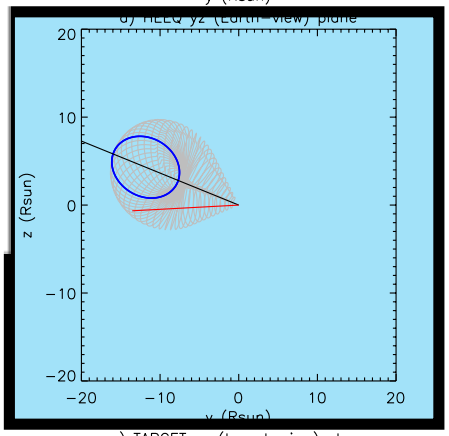


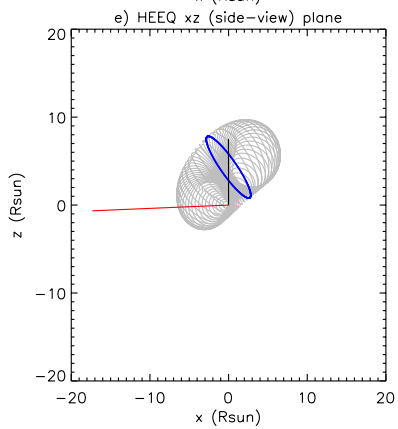


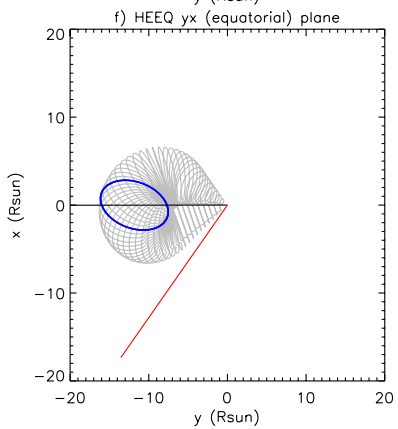


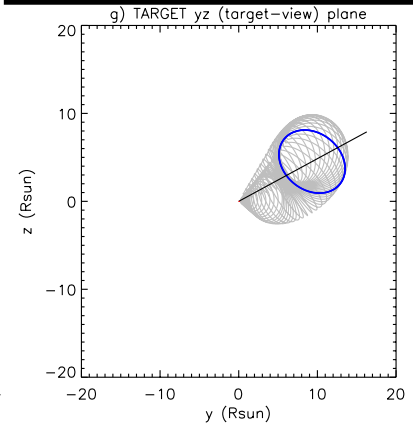


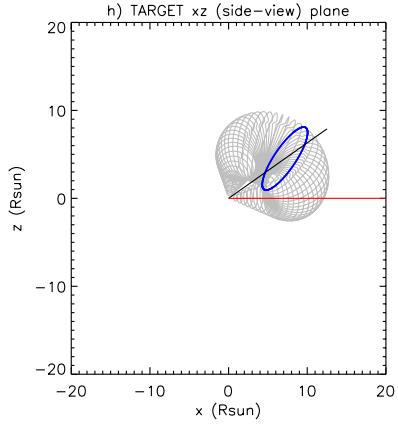


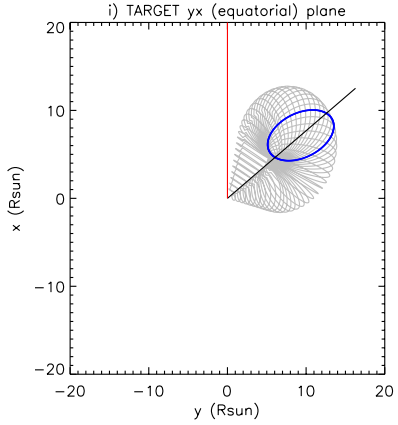




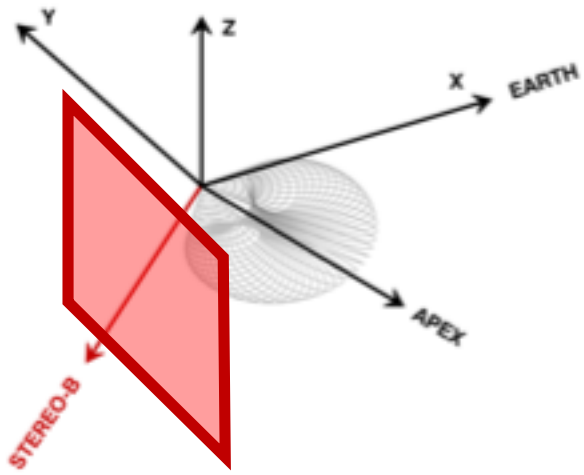


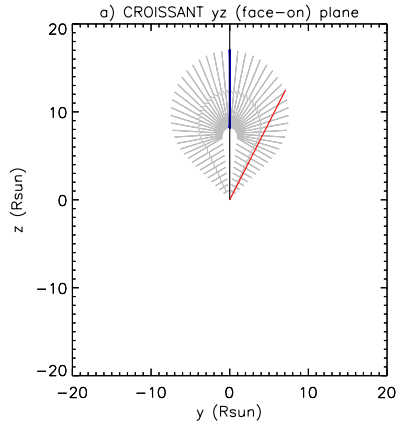


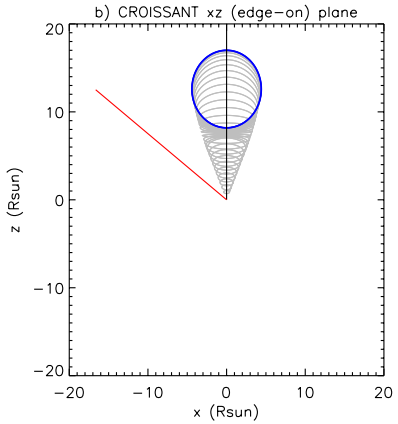


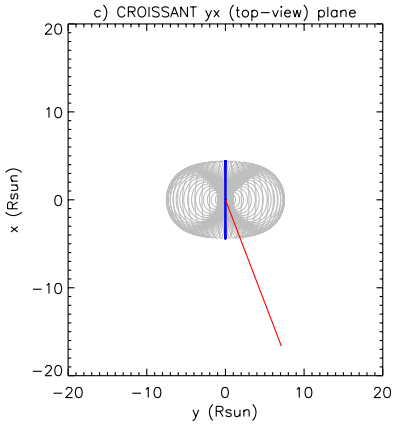


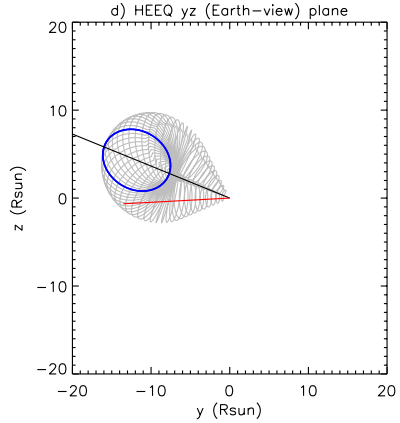
3D CROISSANT → 2D IMAGES

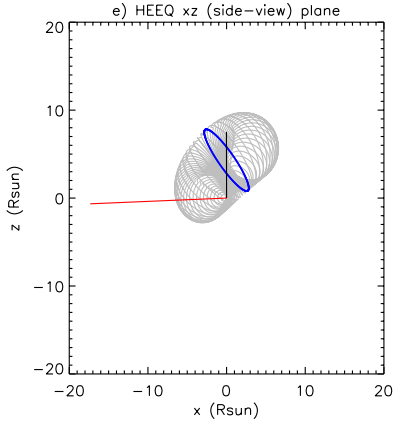


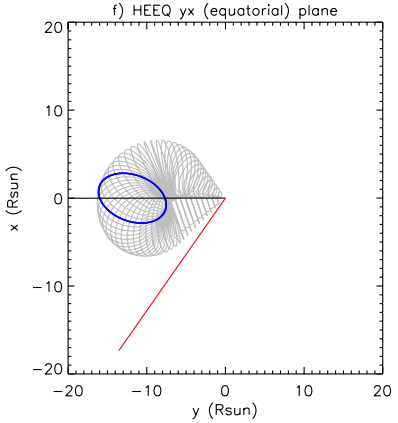


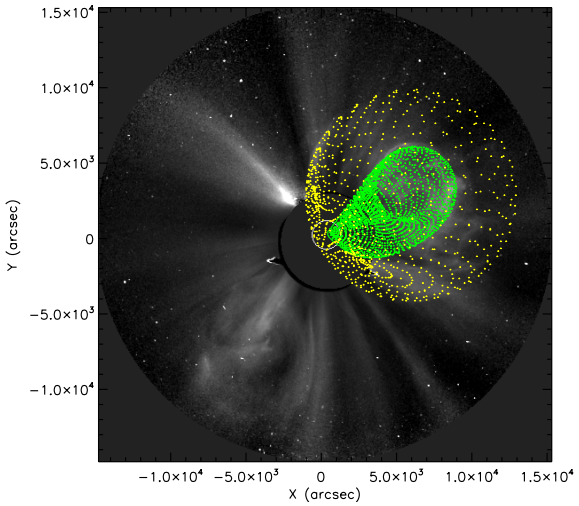


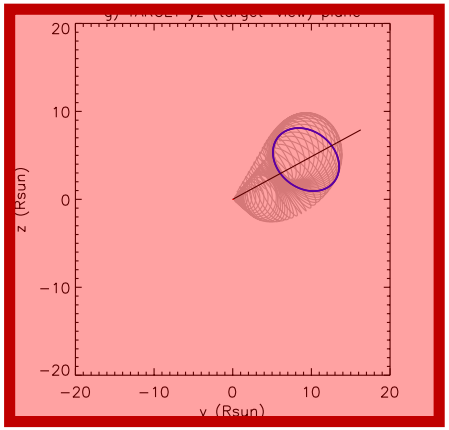


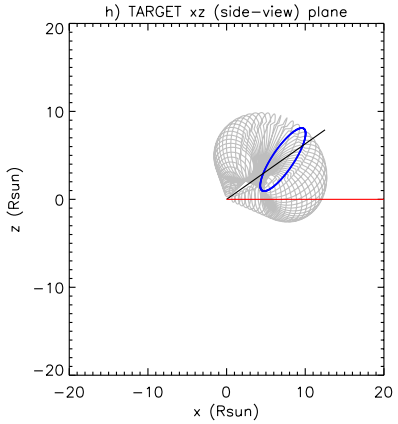


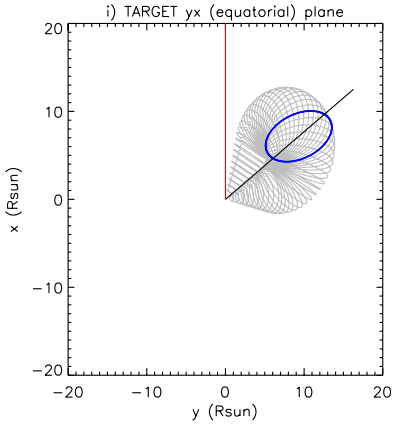




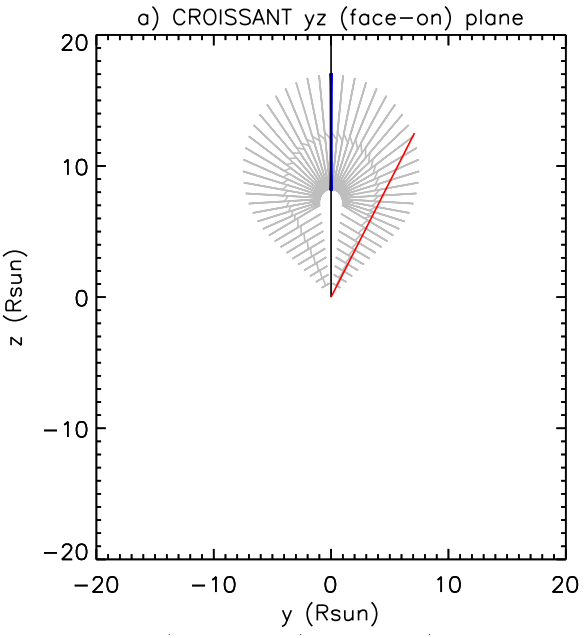


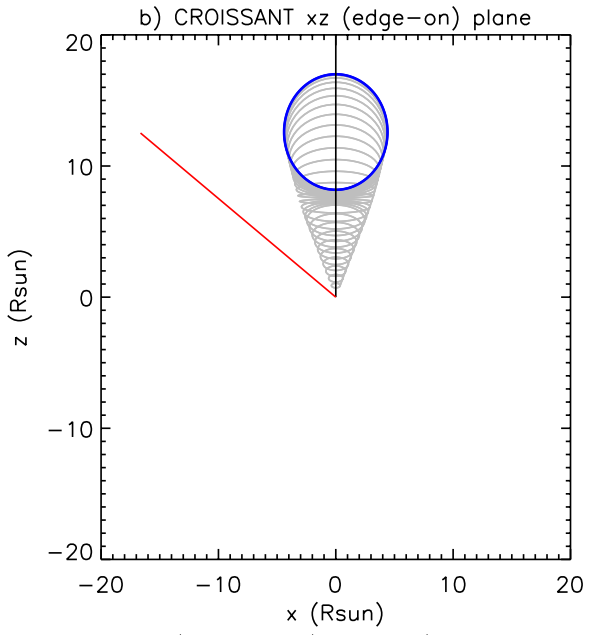


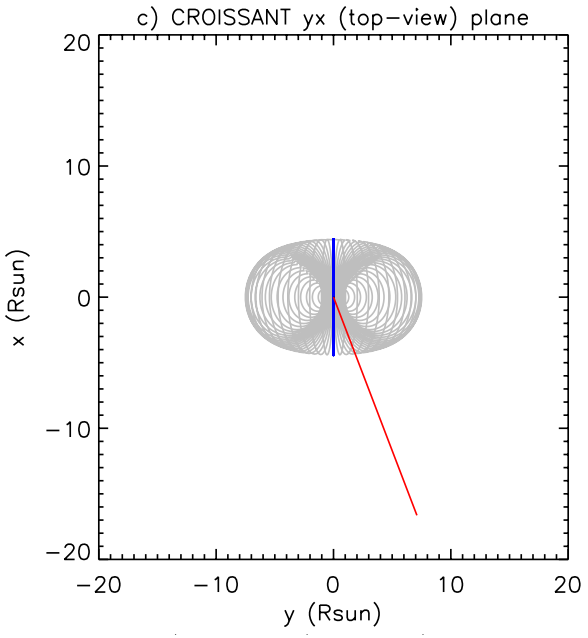


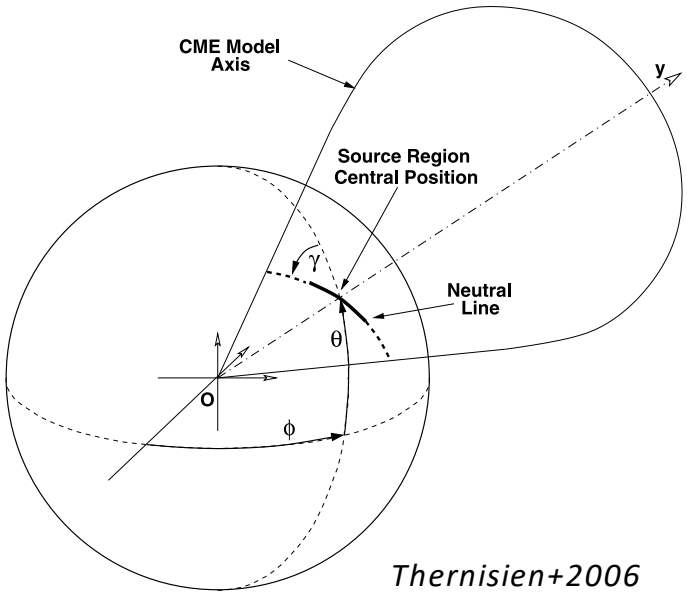


CROISSANT SYSTEM





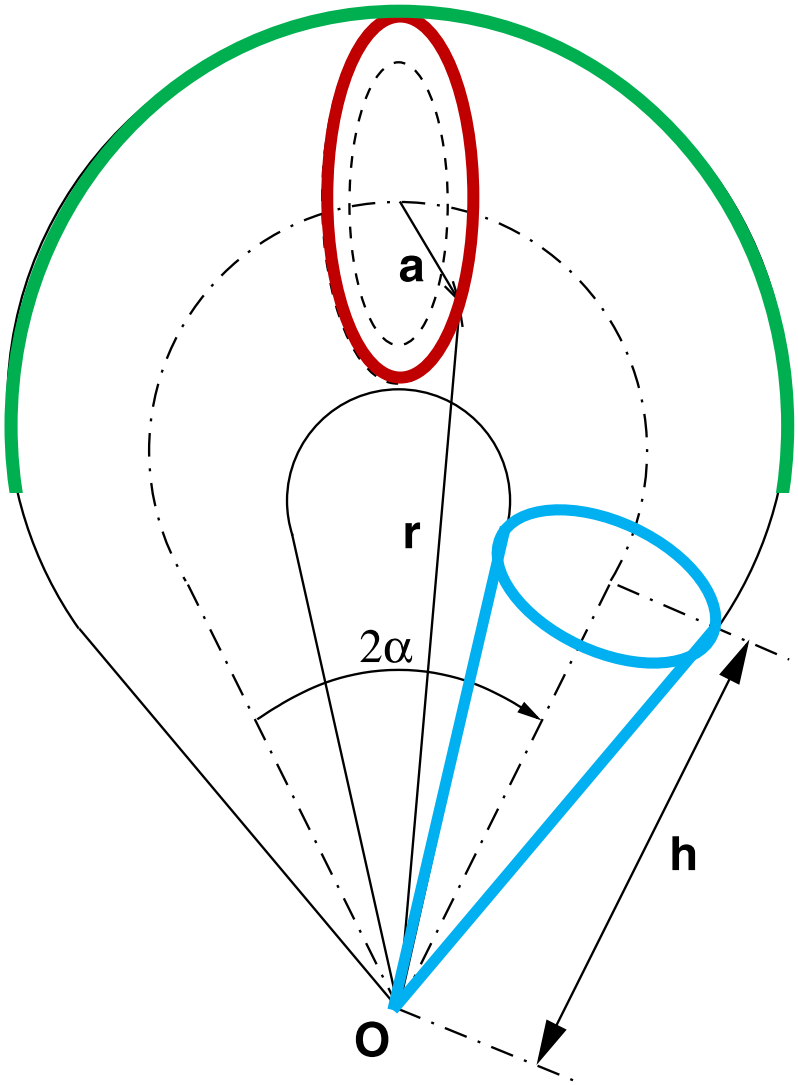




Thernisien+2006

1st axis is apex direction
2nd axis is the direction of FR axis @ apex
Origin @ the center of the Sun

THE CROISSANT GEOMETRY



Thernisien+2006

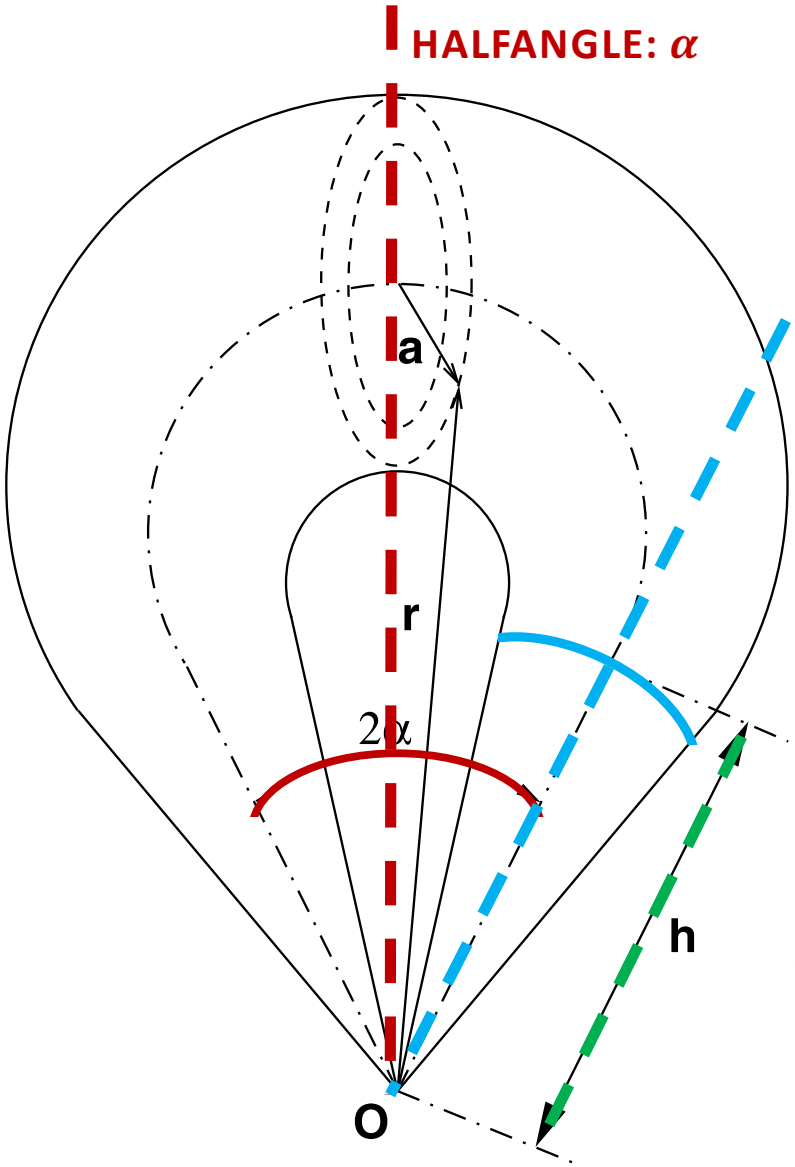
→ HOLLOW CROISSANT

→ **CONICAL LEGS**

→ **CIRCULAR CROSS SECTION**

→ **PSEUDO CIRCULAR FRONT**

THE CROISSANT GEOMETRY



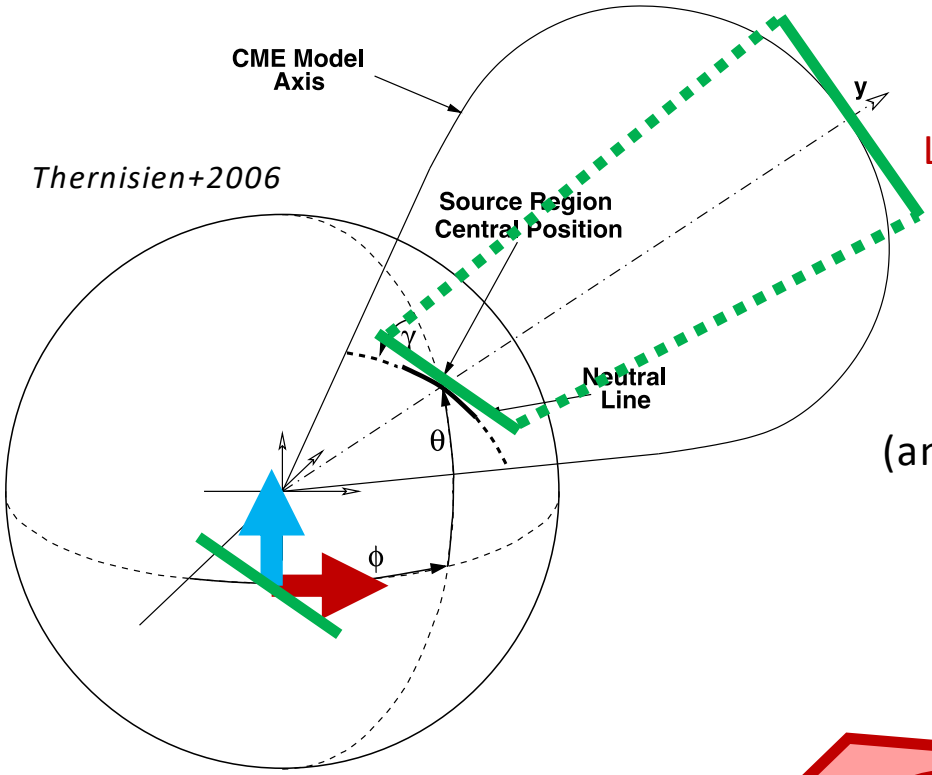
ASPECT RATIO: $\kappa = sin\delta$

Halfangle of the leg: δ

FULL HEIGHT OF THE CONE
(HEIGHT OF THE LEGS)

Thernisien+2006

THE CROISSANT POSITION



Position of the apex in spherical coordinate system:

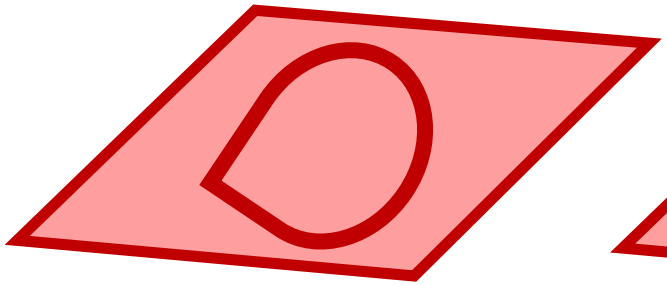
Latitude [-90,90]

Longitude [0,360] (Stonyhurst or Carrington)

+

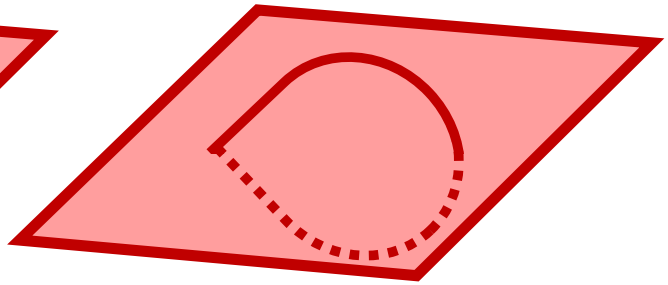
Tilt

(angle of the front with respect to solar equator)



in equatorial plane

tilt=0



Perpendicular to equatorial plane

tilt=90

EXAMPLE CME
2014 February 12