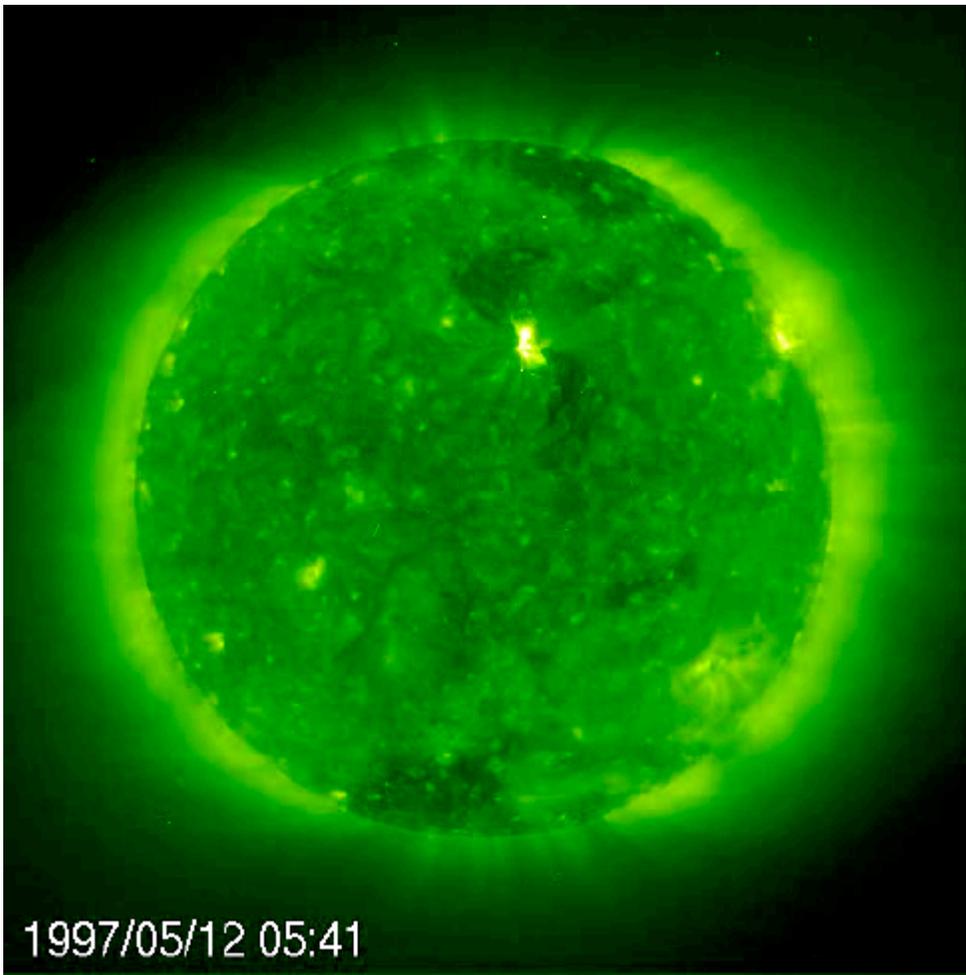


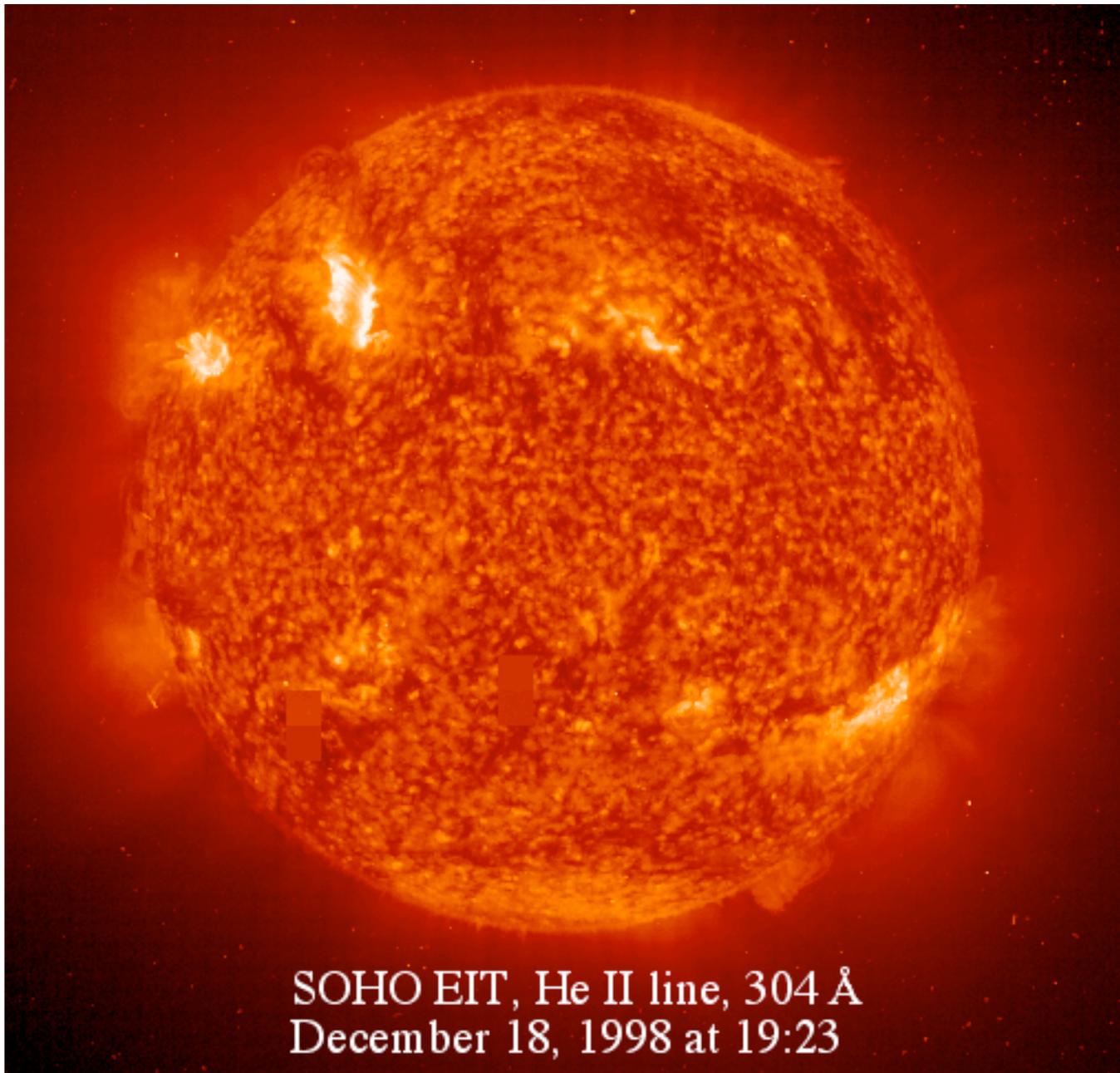
## Dimmings & Related X-Ray Structures Following CME Onset

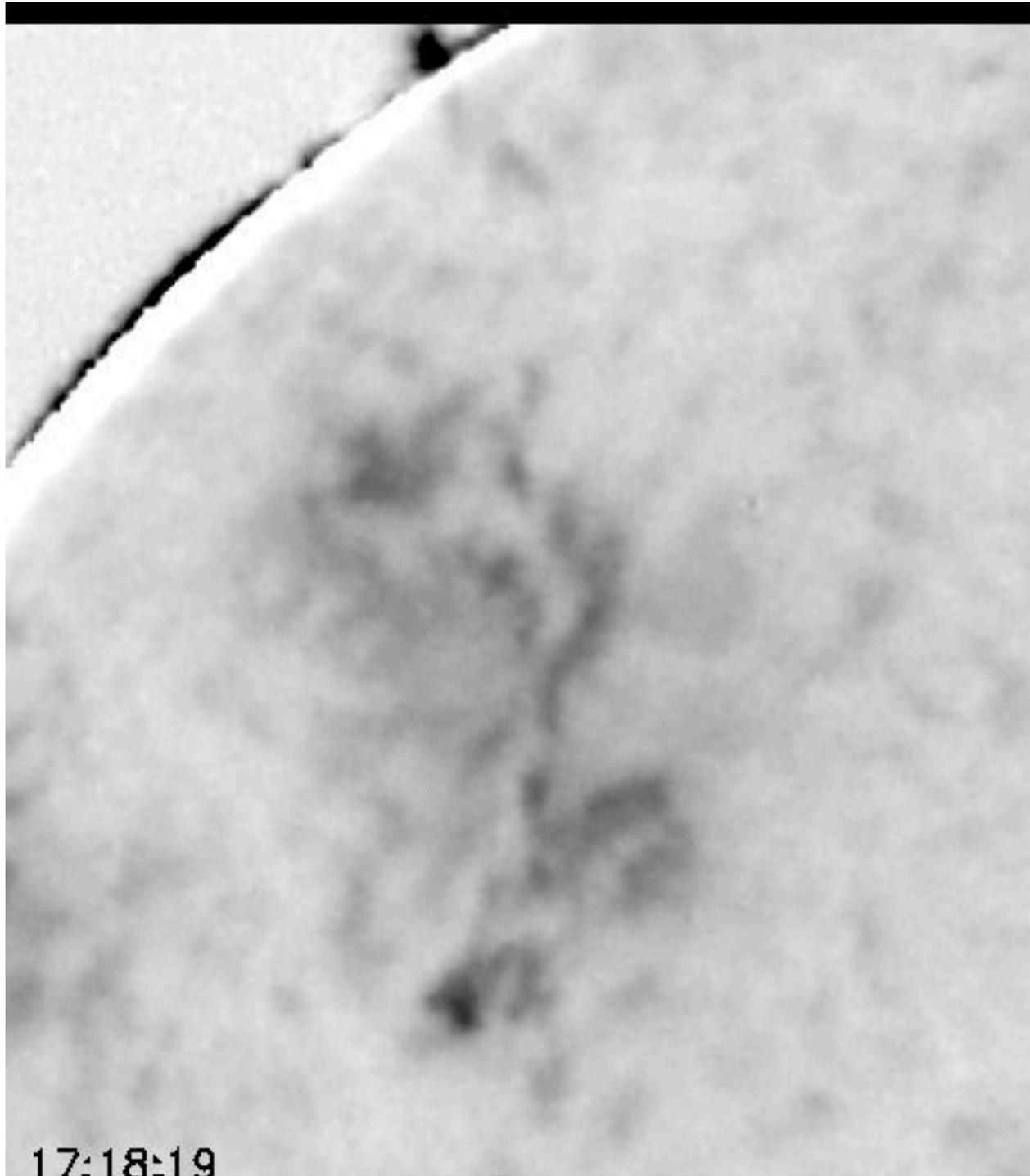


Two types:

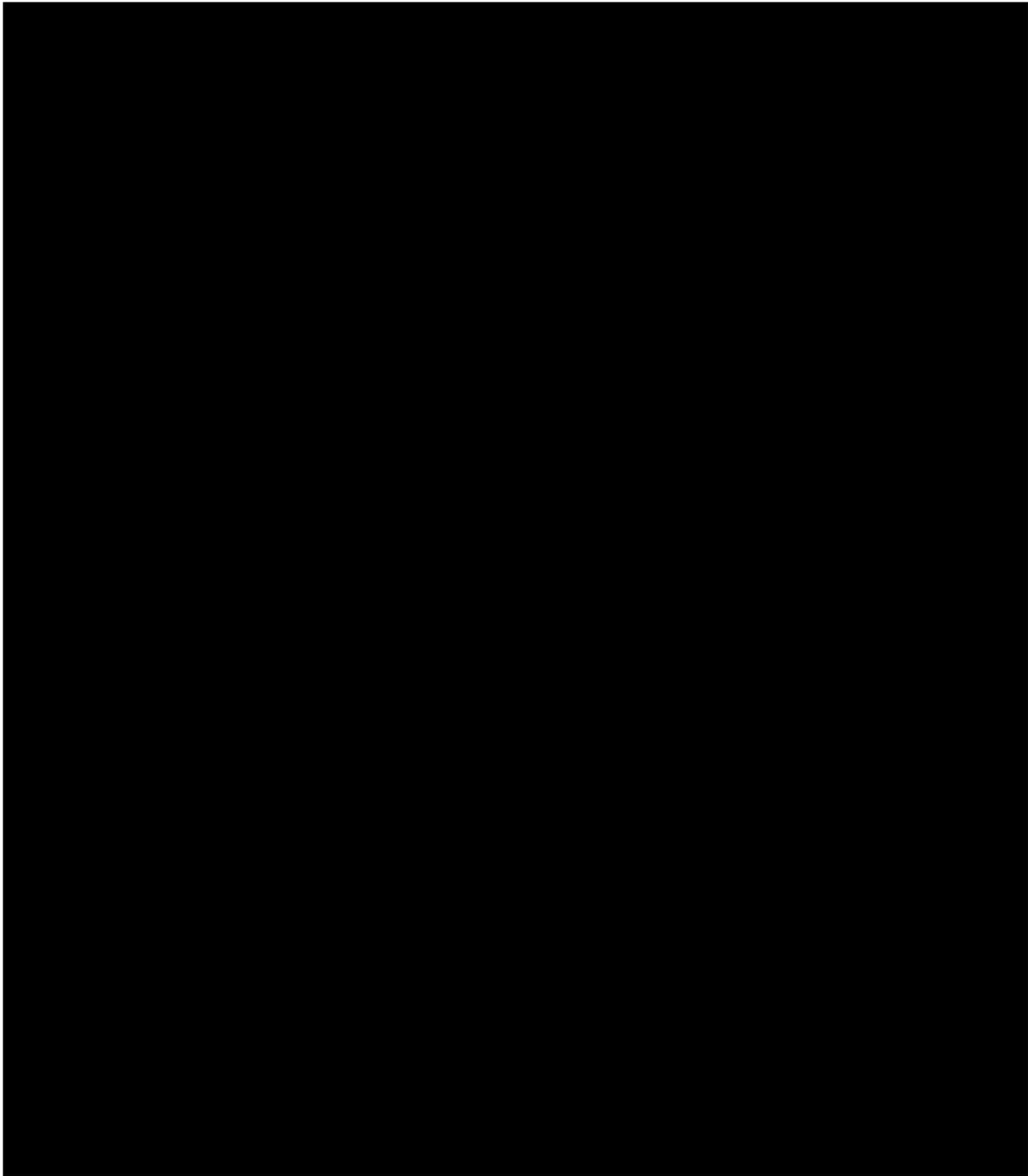
1. Weak dimming caused by wave associated rarefaction
2. Strong dimming caused by ejection of coronal mass

## CME with Two-Ribbon Flare

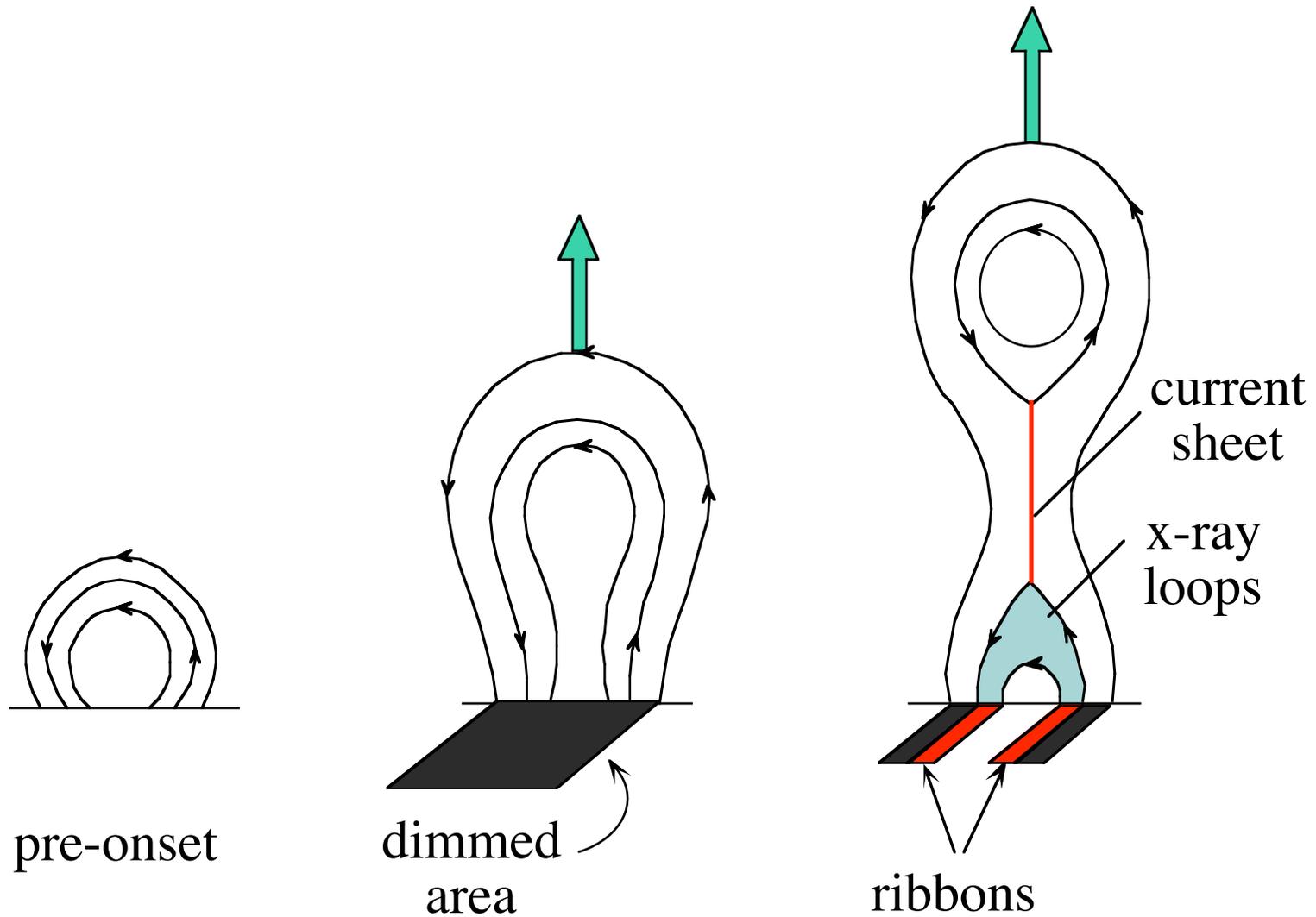




17:18:19

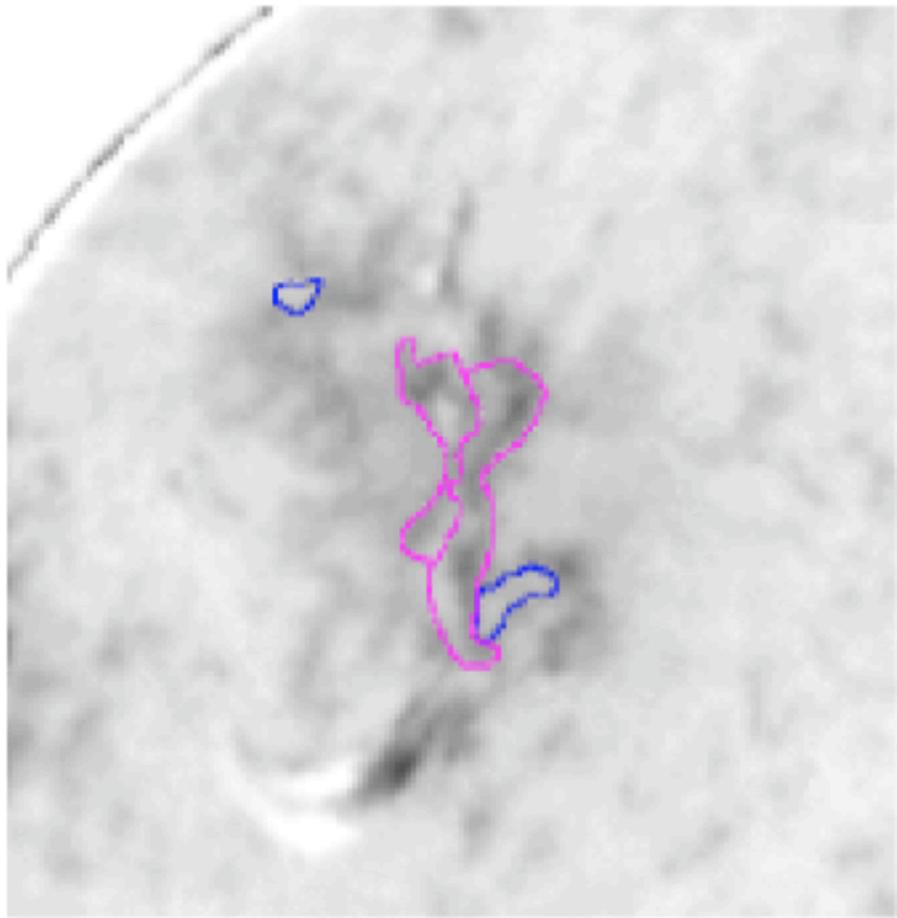


## Relation of Dimmed Areas to Ribbons

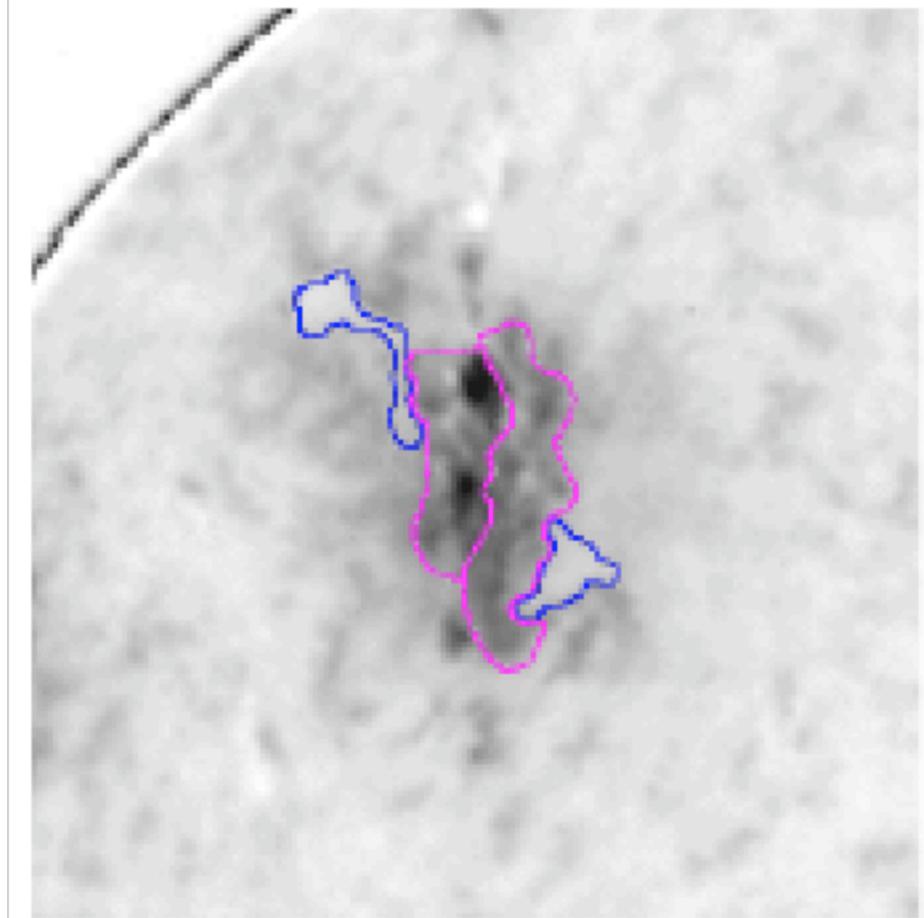


## Comparison of 10830 Transient Holes & Ribbons

strongly dimmed area only



strongly & weakly dimmed areas



area swept out by ribbons

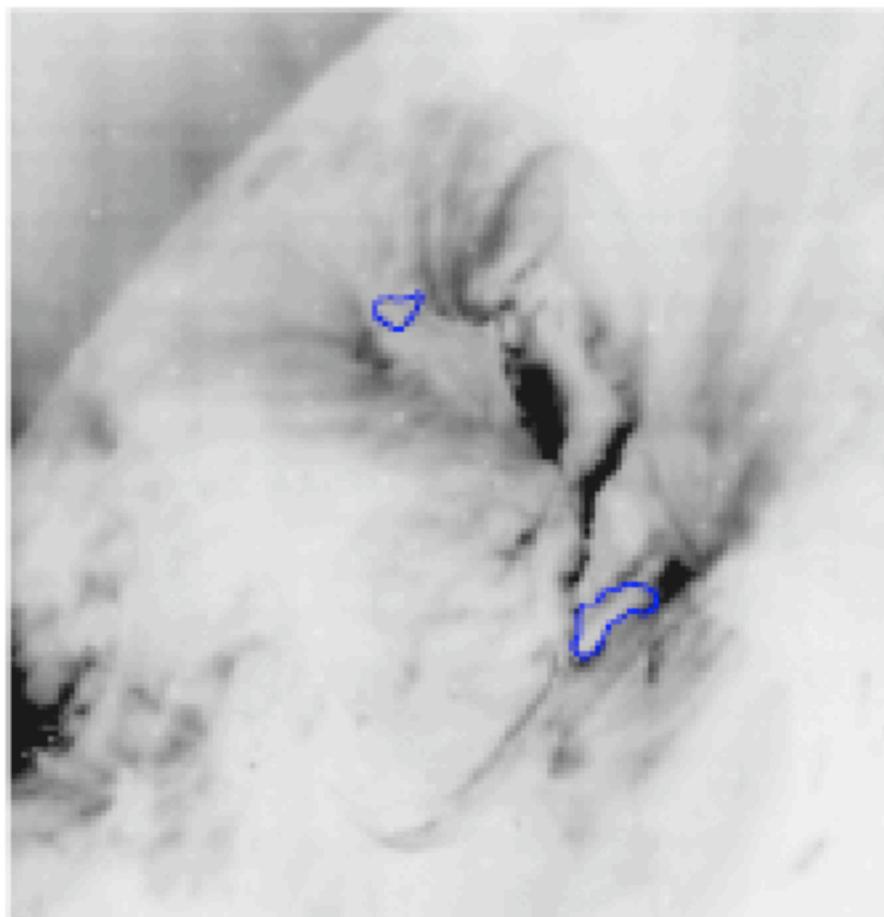


area of transient coronal hole

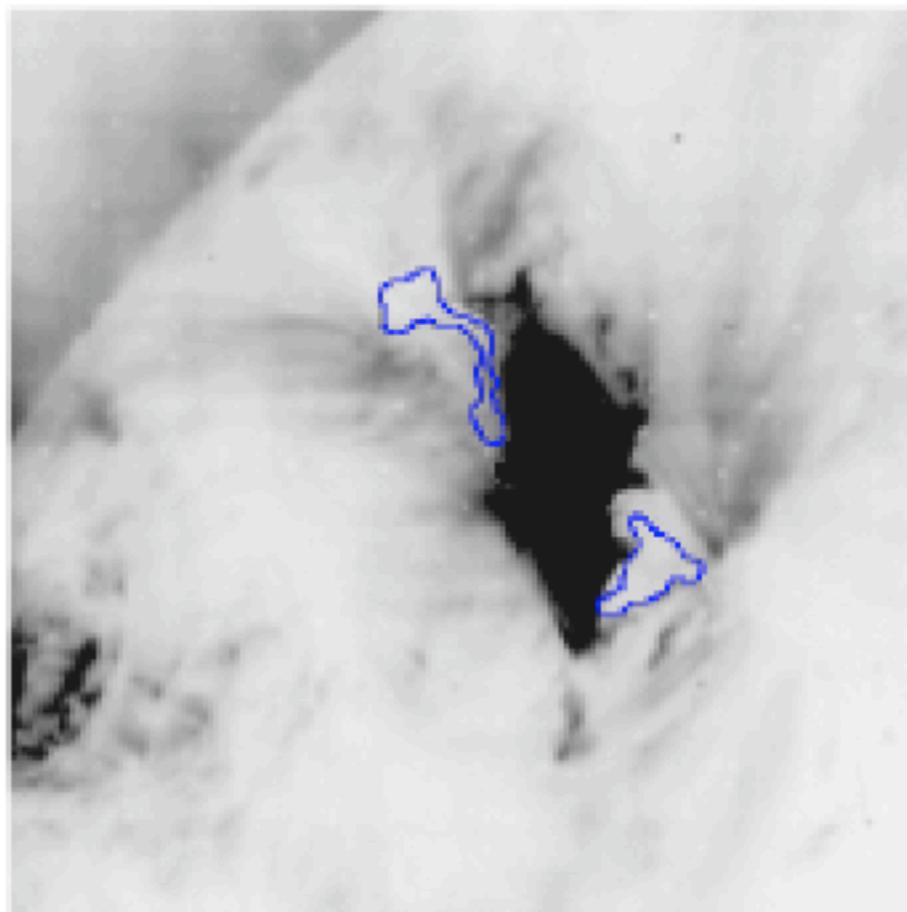
from Harvey  
et al. (2001)

## Comparison of 10830 & EIT 195 Transient Holes

strongly dimmed area only

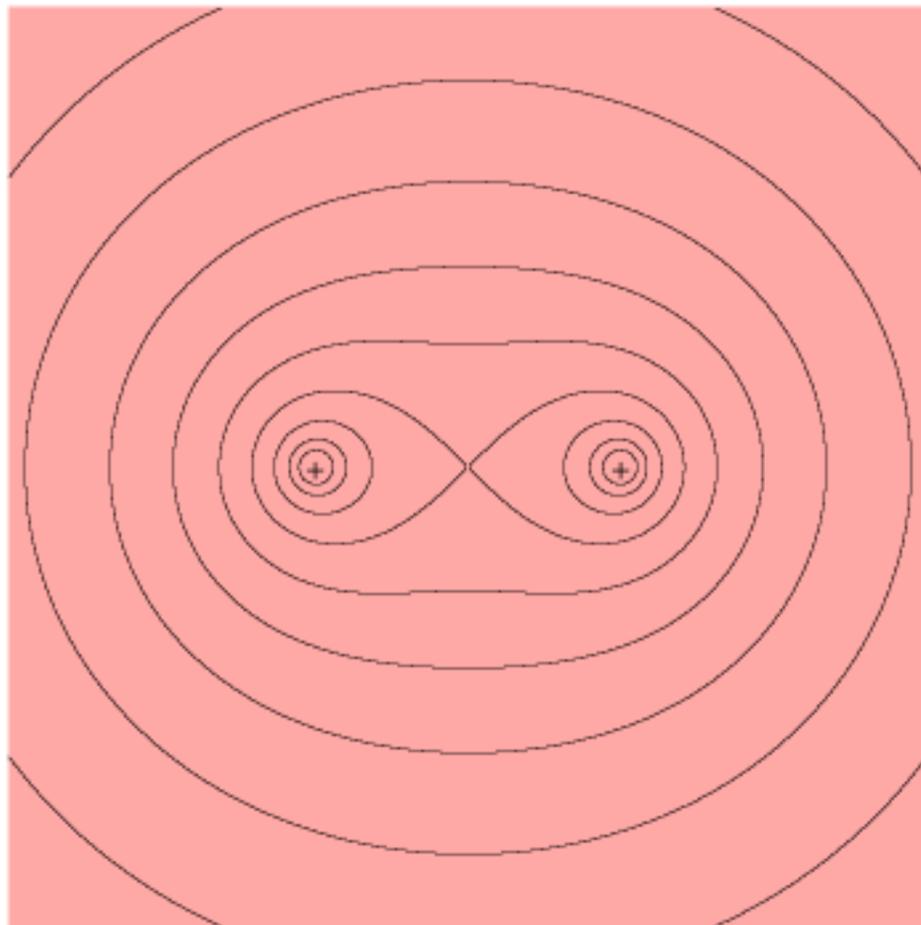


strongly & weakly dimmed areas

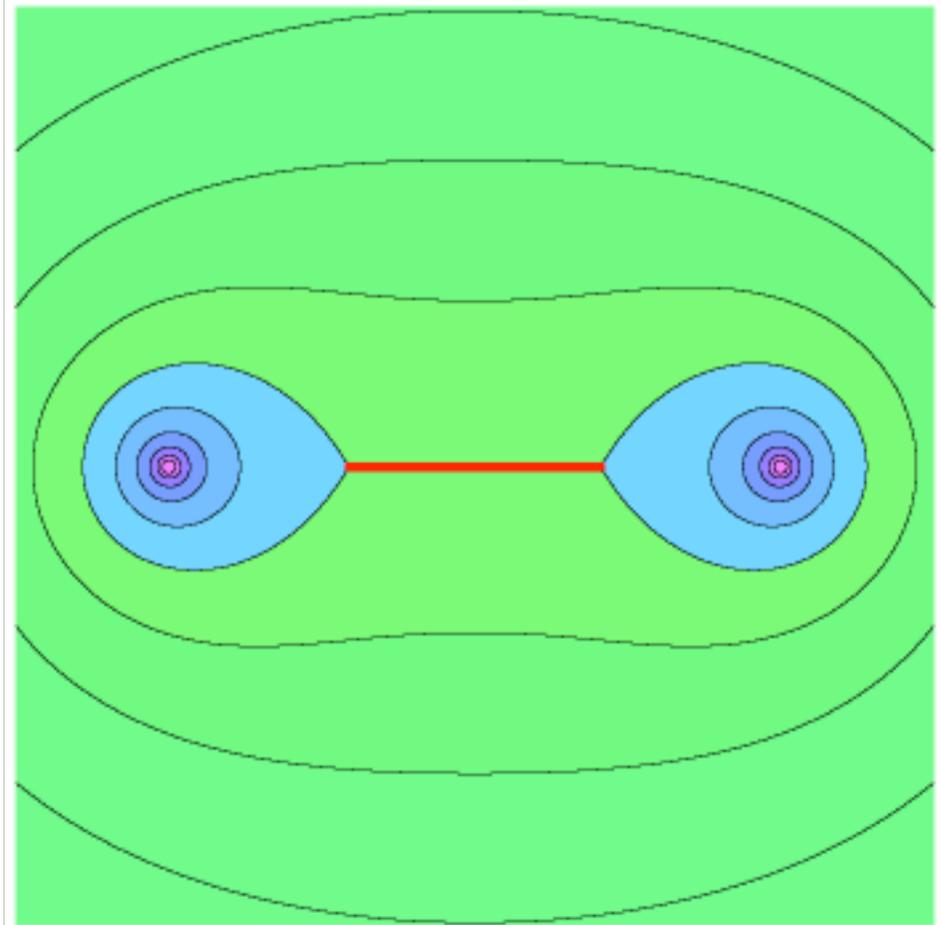


# Density Changes Created by Stretching a Separatrix

initially

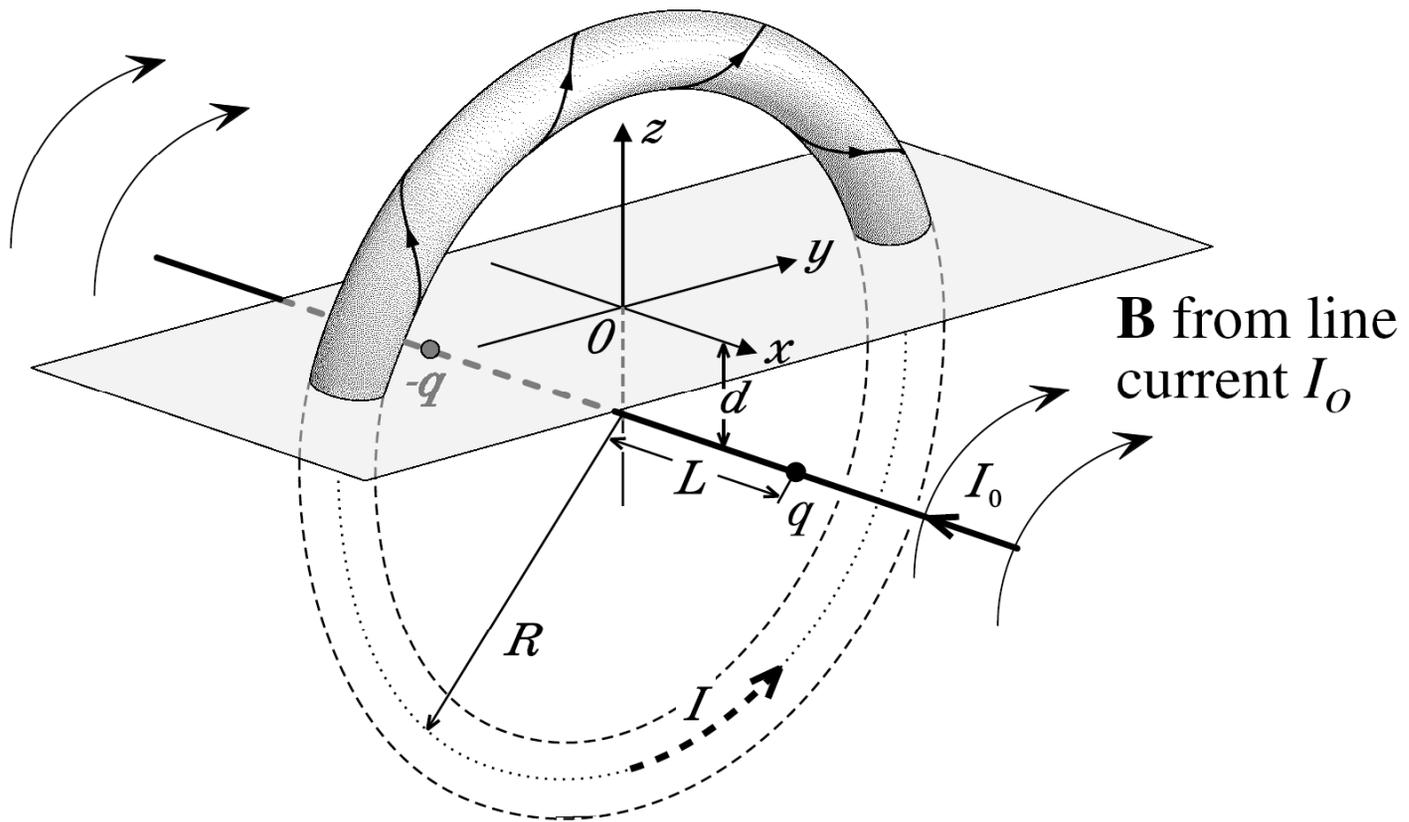


after separation

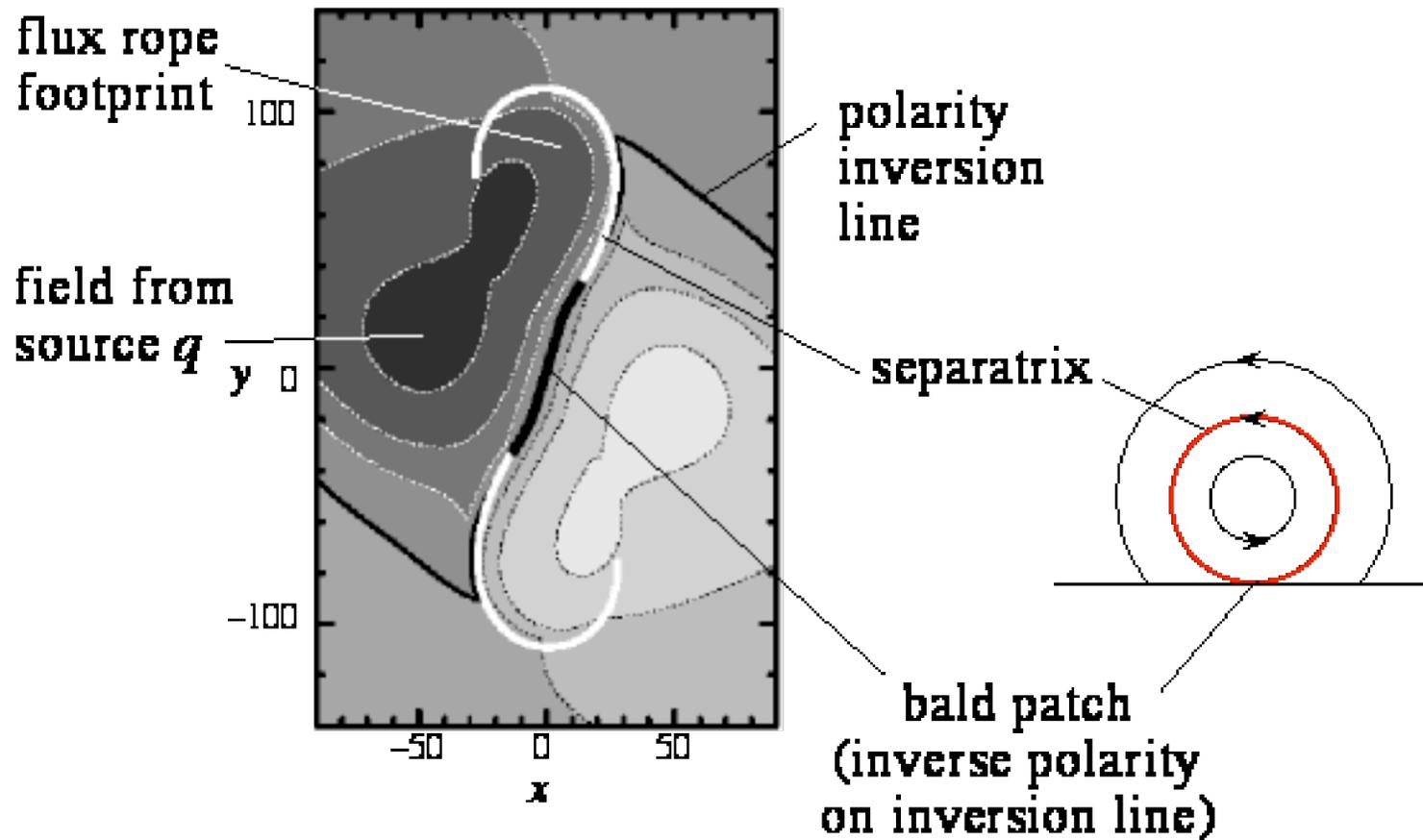


## 3D Flux Rope Model (Titov & Démoulin 1999)

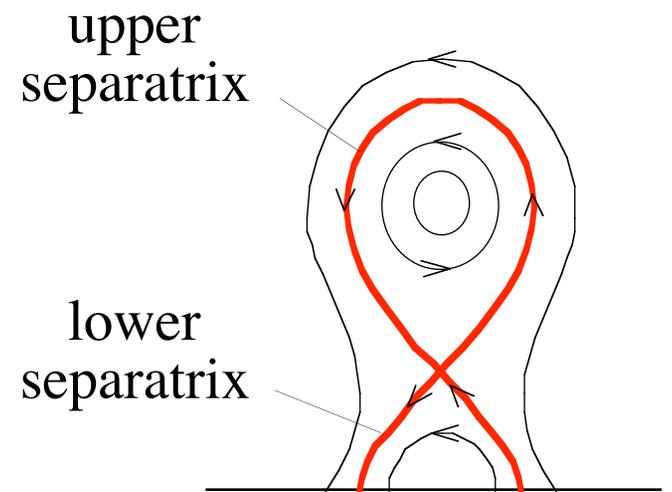
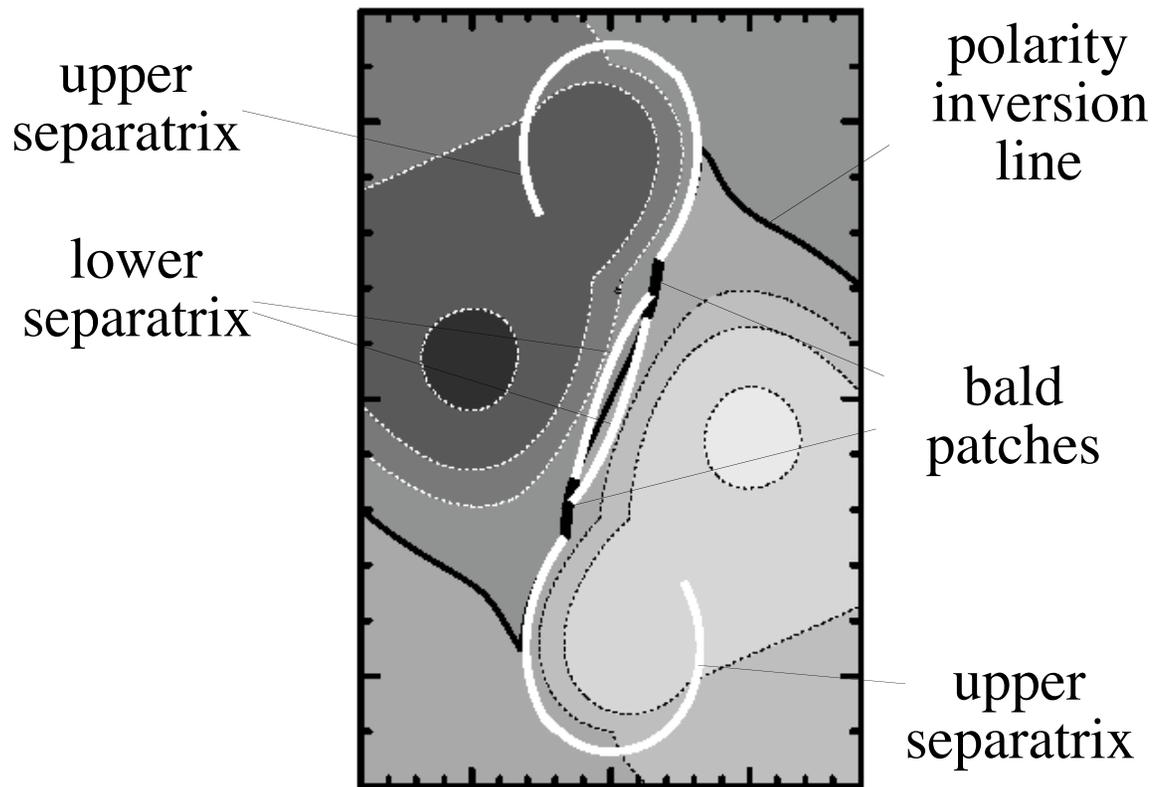
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## Photospheric Field Topology of T&D Model



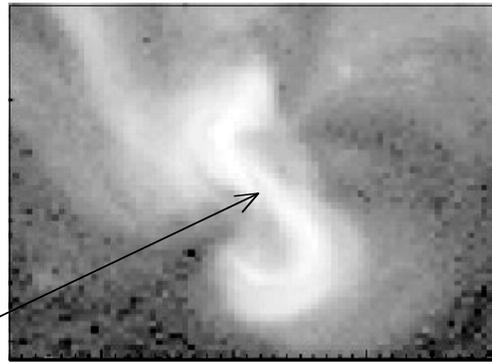
## T&D Model with Flux Rope at Higher Altitudes



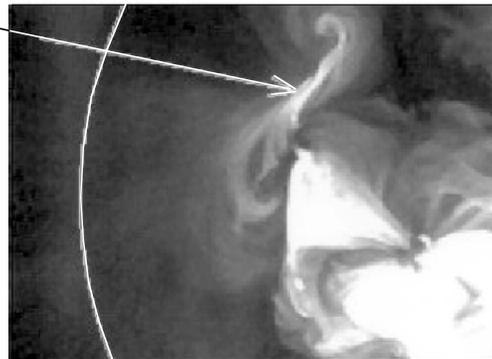
## Sigmoids: Reconnection structures before onset?

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separatrices  
(sigmoids)

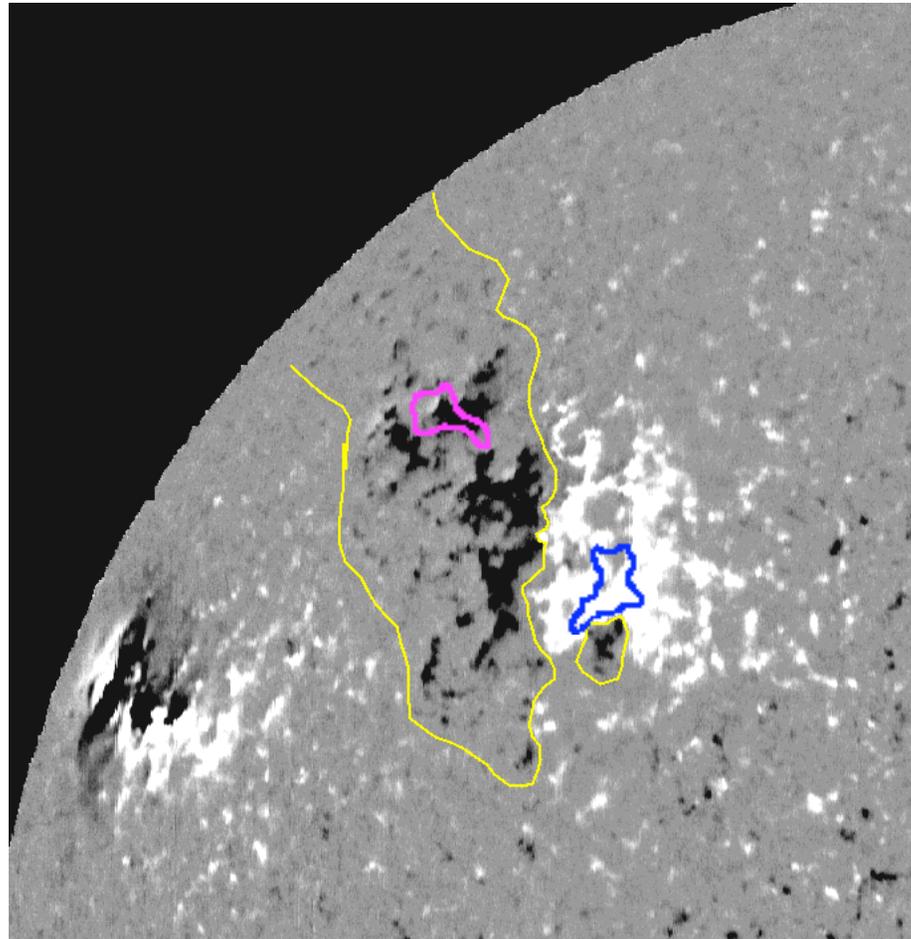


from Sterling  
et al. 2000



from Rust &  
Kumar 1996

## Position of Strongly Dimmed Area Relative to Surface Magnetic Field



## Summary

1. 10830 transient coronal holes may have two distinct levels of dimming.
2. The strongly dimmed area of the 10830 holes is significantly smaller than the corresponding EIT holes.
3. One possible explanation for these features may be that discontinuous levels of dimming are created because the field lines stretched by the CME contain a separatrix connected to a current sheet.