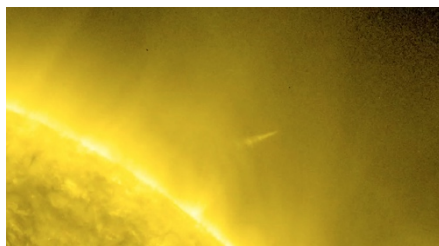


# Using the Sun to Study Comets and Comets to Study the Sun



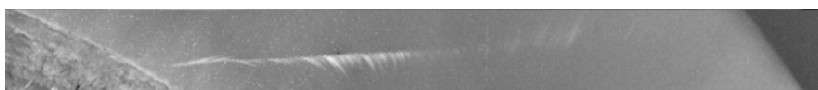
SOHO watched more than 3000 sungrazing comets that met their demise at the Sun, only SDO has been able to observe comets traveling through - and even surviving - the Sun's lower atmosphere.



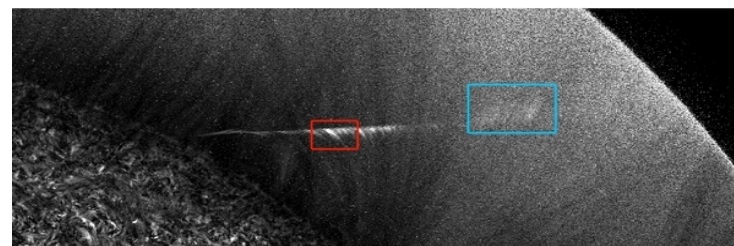
Comet Lovejoy  
passing through  
lower solar  
atmosphere.



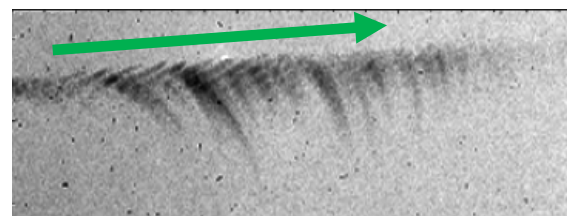
A sequence of EUV  
images shows  
trajectory of Comet  
Lovejoy through  
solar corona.



The composite trajectory was determined more precisely  
using a new imaging technique developed at Goddard.\*



Measuring light along comet's path helps to understand comet  
structure and physics.



Measuring motion away from trajectory of the comet (arrow)  
helps study of the solar atmosphere and the magnetic field in  
the lower corona. Charged material leaving the comet follows  
curved paths, tracing out the sun's magnetic field. These  
fields are extremely difficult to measure with other means.

Cooper Downs, et al., *Science*, **340**, 6137

W. Dean Pesnell (671) and Paul Bryans (671), 2014: *Astrophysical Journal*, **785** 50

\*Barbara J. Thompson (671) and C. Alex Young (670), 2016: *Astrophysical Journal*, **825** 27