

1) What previously made measurements expanded in time and space domains would hold potential to answer critical science questions and/or contribute to community or system science? (Outline science questions, measurements, and rideshare opportunity).

DS Key Science Goal 1:

Determine the origins of the Sun's activity and predict the variations in the space environment.

Science Questions	Measurement	Rideshare Opportunity
How does solar activity varies across solar cycles?	24x7 B_{phot} , EUV, VIS Coron. Spectral/Total Irradiance	Polar Sun-Synch. Orbit 600+ km
How do CMEs form and evolve?	CME/ICME kinematics from L4/L5	2ry s/c to transfer, lunar or other Earth-escape orbits
What are the properties of the coronal sources of CMEs?	EUV stereoscopy (hot/cold lines) . 5°-15° ang. sep.	
Understand the lifecycle of solar activity	Full Sun (ecliptic) B_{phot} + EUV imaging + VIS Coron.	'string-of-pearl' config. Of Identical s/c in drifting orbits

2) What novel measurements would hold potential for resolving key open science questions or lead to discoveries? (Outline science question/discovery, measurement, and rideshare opportunity)

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Science Questions	Measurement	Rideshare Opportunity
How does the magnetic field evolve with height?	24x7 B_{chrom} , B_{phot}	Polar Sun-Synch. Orbit 600+ km GEO
How do shocks form, evolve, and accelerate particles?	Off-limb multi-slit spectroscopy (from L4/L5 for SpW research)	Polar Sun-Synch. Orbit 600+ km
How does the magnetic field rises through the convection zone?	Multi-point B_{phot} + Doppler	2ry s/c to transfer, lunar or other Earth-escape orbits
How is magnetic energy explosively released in the corona?	HXR + EUV + VIS COR from 1~4 Rs	Precision formation-flying constellations at GEO or higher

3) What high-risk, high-reward science questions could take advantage of this opportunity? (Outline science question and rideshare opportunity)

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→ 4π coverage with B_{phot} , Doppler, EUV, HXR, COR, ...

Science Questions	Measurement	Rideshare Opportunity
What is the CME internal configuration?	Multipoint particles + fields upstream of L1 (~ 0.3 AU)	Ride to transfer orbit, then burn to quasi-satellite orbit
Where and how does the magnetic energy accumulate in the corona?	$B_{\text{TR/upper chrom.}}$	Precise formation of large aperture telescope at GEO or Polar Sun-Sync. Via multiple launches