

# 1.2.1.2 Energy and mass flux in the corona.

## Description of the objective:

Energy and mass flux in the corona. Loss in form of conduction, radiation, gravitational energy, enthalpy, and kinetic energy fluxes into the accelerating solar wind plasma.

*This goal needs better definition and detailed description.*

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- **SPICE** (updated by Alessandra Giunta, 01/12/2015):
  - Target: Quiet Sun, Active Regions, Coronal Holes
  - Observing mode: Dynamics, Waves, 30" Wide Movie
  - Slit: 2" for Dynamics, 4" for Waves, 30" for Wide Movie
  - Exposure time/cadence and number of X positions: 5 s, X=128 for Dynamics; 5 s, X=720 for Waves; 5 s, X=120 for 30" Wide Movie (Fix Mirror for Waves and 30" Wide Movie, time series, multiple images)
  - ~~Field of View: 4"x11" for Dynamics, 48"x11" for Waves, 60"x14" for 30" Wide Movie~~ Same as for the previous one, see 1.2.1.1
  - Number of repetitions of the study: 3 for Dynamics followed by 1 for Waves and 1 for 30" Wide Movie
  - Observation time: 0.6 hours for Dynamics (0.2 hours per study), 1 hour for Waves (1 hours per study), 0.175 hours for Wide Movie
  - Key SPICE lines to be included: H I 1025 Å, C III 977 Å, O VI 1032 Å, Ne VIII 770 Å, Mg IX 706 Å, Si XII 520 Å (x2) – 10 lines (4 profiles and 6 intensities) for Dynamics; C III 977 Å, O VI 1032 Å, Ne VIII 770 Å- 3 lines for Waves; C III 977 Å, O VI 1032 Å – 1 or 2 line for 30" Wide Movie
  - Observing window preference: High latitude when possible. Perihelion is good for high resolution.
  - Other instruments: EUI/FSI and HRI for context imaging; PHI for magnetic field structure; METIS for solar wind mapping.
  - Comments:
    - The choice of lines, and also the number of intensities and profiles, is flexible, although the sum of the intensities and profiles is constrained to a maximum (e.g 15 for composition mapping). While varying the number of intensities and profiles, within the maximum, has no effect on the duration of the study, it will have an effect on the telemetry.
  - Possible binning on Y direction (groups of 4 pixels)