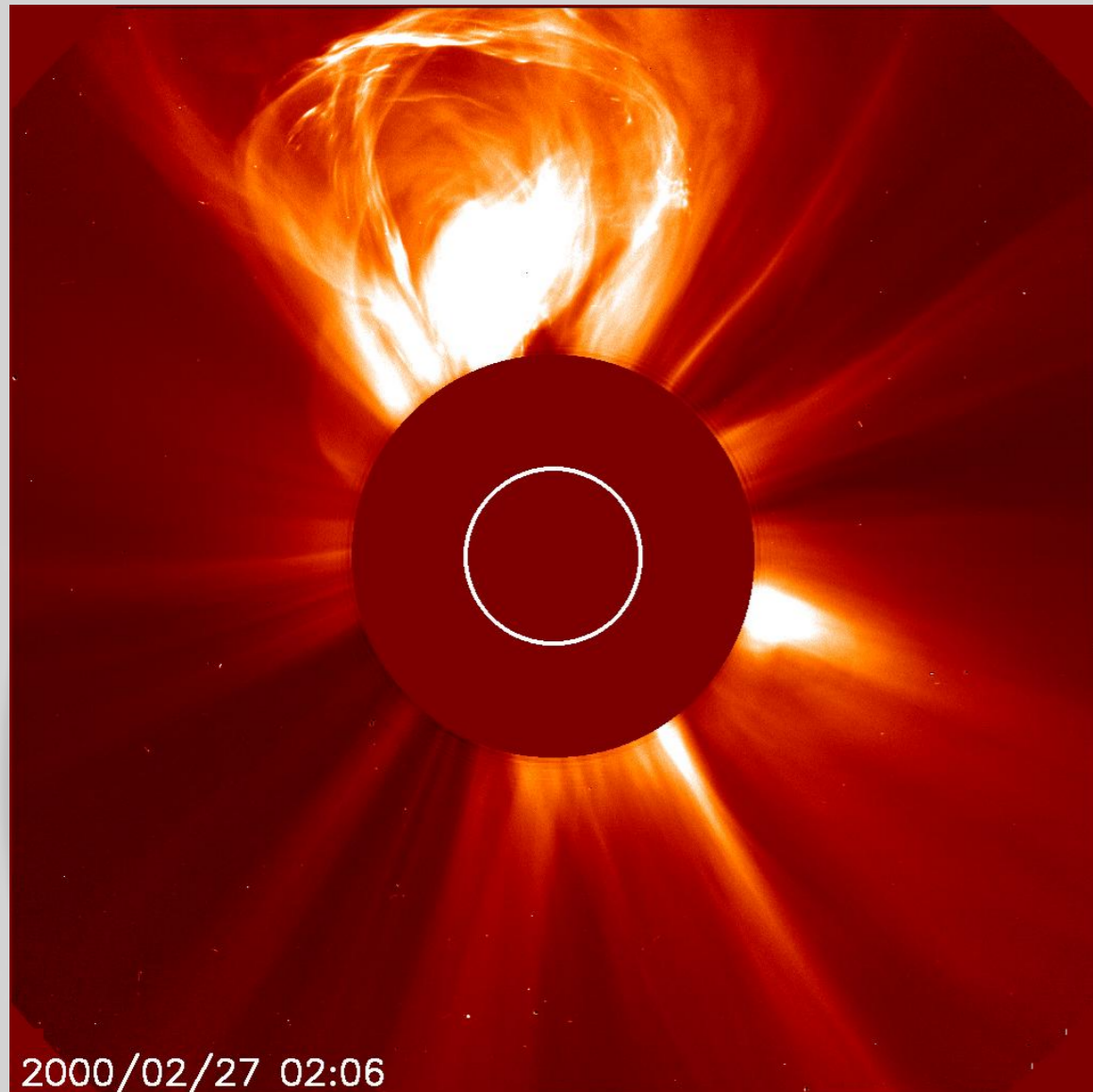
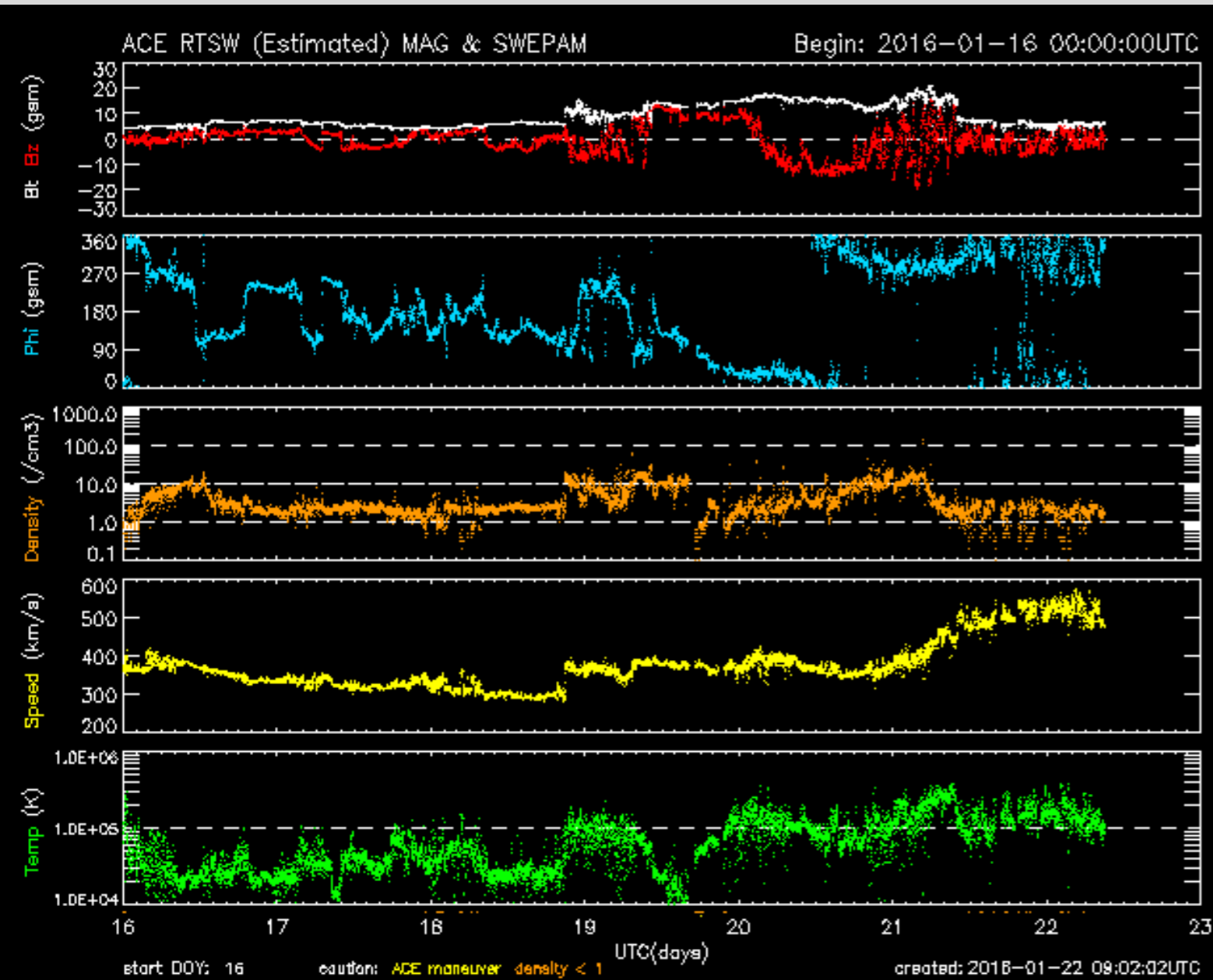


Solar wind transients Passport



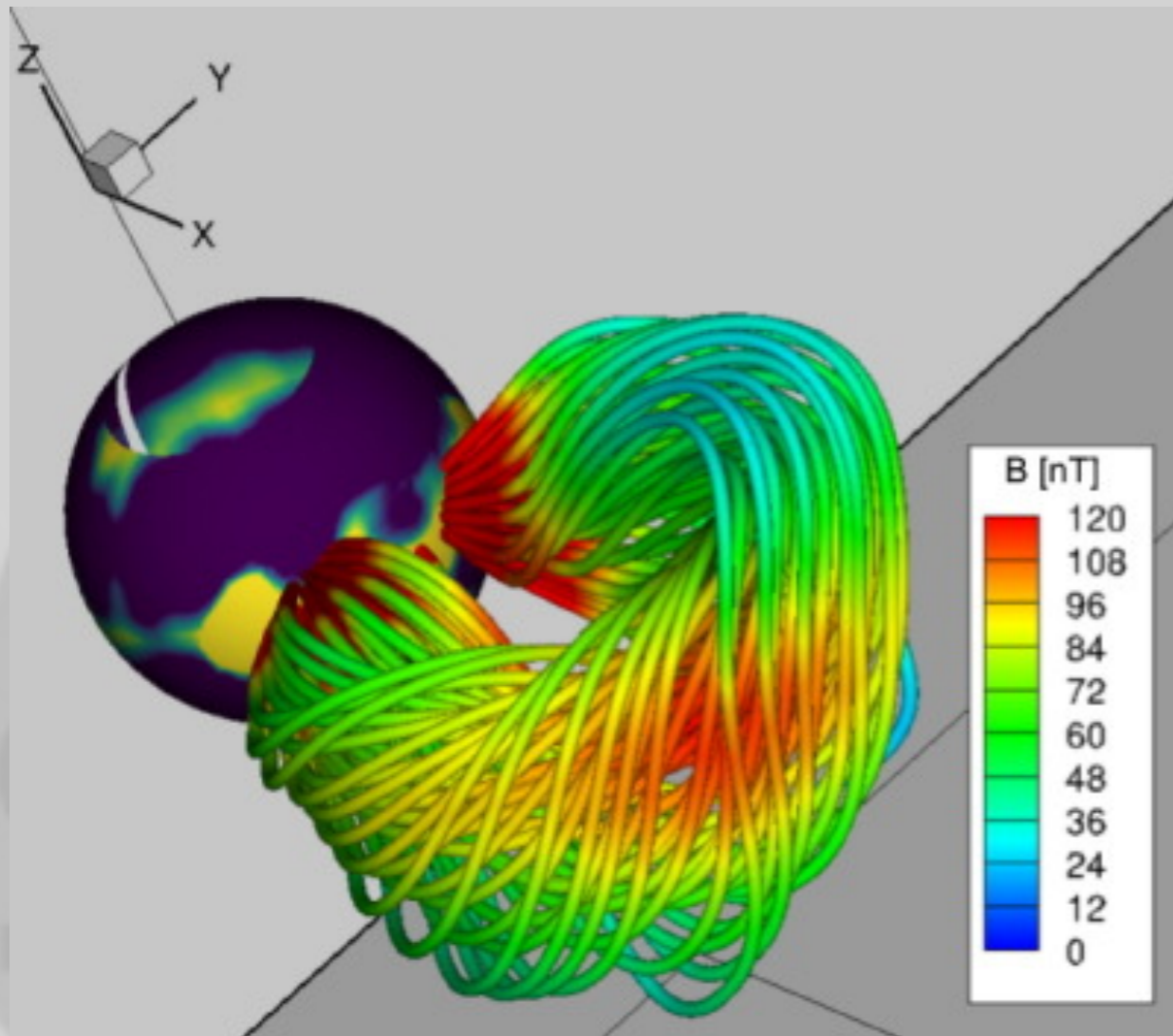
<p>Type</p> <ul style="list-style-type: none"> Solar transients Solar wind transients 	<ul style="list-style-type: none"> Solar flares, solar energetic particles, coronal mass ejections – CMEs, eruptive prominences, shocks CMEs, eruptive prominences, shocks
<p>Importance for the space weather: Most important for space weather are CMEs.</p>	<p>CMEs are large expulsions of the plasma and magnetic energy from the Sun into the heliosphere.</p>
<p>Associated phenomena:</p>	<ul style="list-style-type: none"> CMEs can drive shock waves and be associated with particle events (so called proton-rich SEP events). Can be associated with prominence/filament eruptions & flares EIT waves, coronal dimmings, off limb signatures
<p>Characteristics:</p>	<ul style="list-style-type: none"> 3part structure: core, cavity, leading edge

Observation of CMEs - Passport



Observations:	<ul style="list-style-type: none"> • EUV data • White light data • In situ data
Main instruments:	<ul style="list-style-type: none"> • SDO/AIA, SOHO/EIT, Proba2, Solar Orbiter • SOHO/LASCO, STEREO, Solar Orbiter • ACE, SOHO/Celias, DSCOVR, Parker Solar Probe

Modelling of CMEs - Passport



Some models of solar wind:

- EUHFORIA
- ENLIL
- COCONUT
- Icarus

CME models in EUHFORIA:

- Cone model
- Spheromak CME
- FRi3D
- Torus CME model
- Horseshoe CME model



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