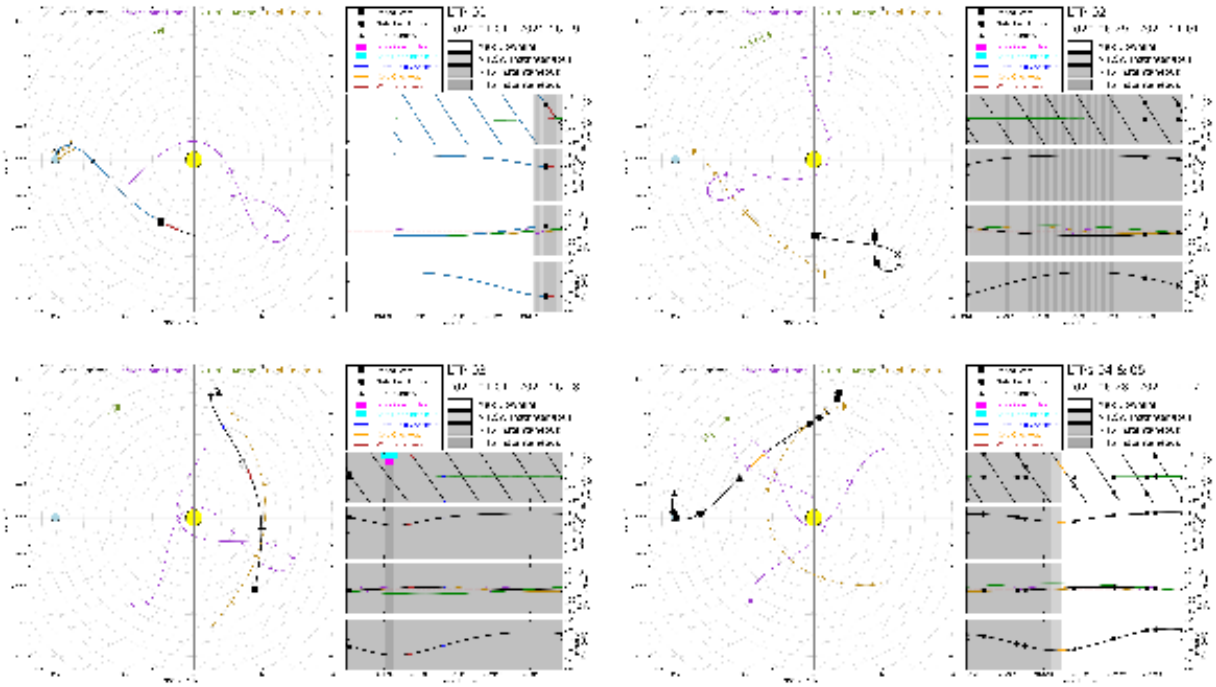
Orbit Plots

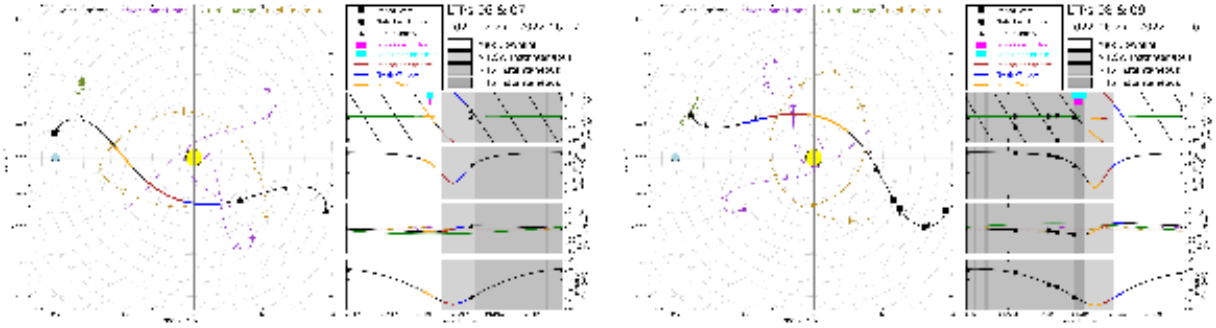
In March 2021, it was decided to change the typical duration of an LTP from 6 to 3 months, in order to allow Flight Dynamics to produce stable LTP input and to add flexibility by planning LTP closer to the execution dates. The orbit plots still have a six month duration, and the files are named accordingly, but each plot now covers two LTPs.

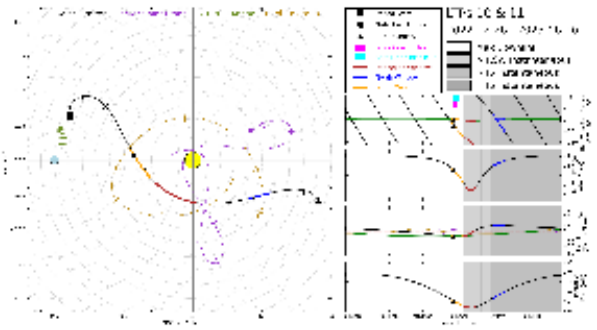
Additionally the apparent roll angle of the spacecraft with respect to Solar North has been added. This is defined as the angle between the the projection of the solar north rotational pole onto the spacecraft YZ plane and the spacecraft Z axis. This is based on planning files and reflects the current knowledge at the time of plot production.

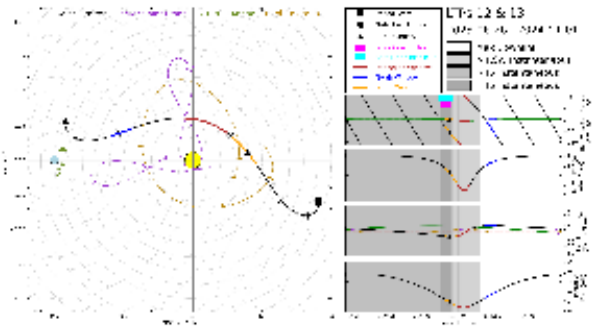
Cruise Phase Orbit Plots by Half-Year (Updated April 2021)

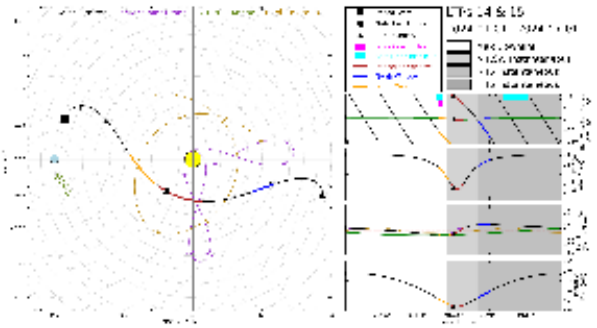


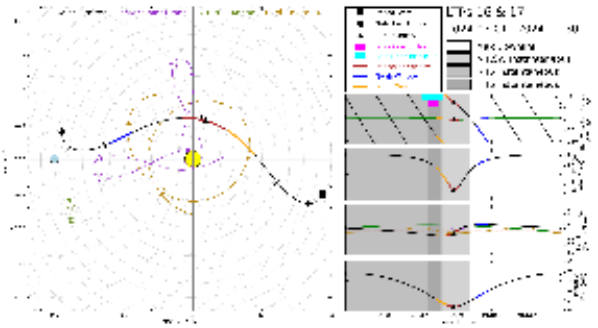
Science phases (Updated September 2021 with RSW and LTP dates for 2022)

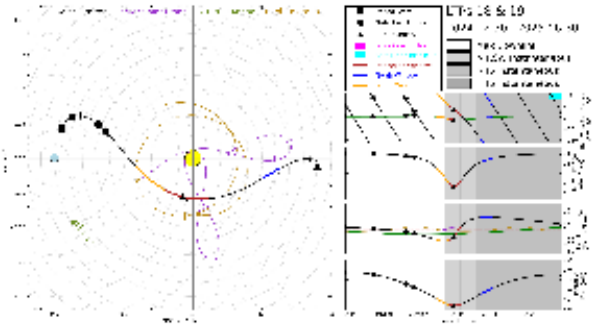


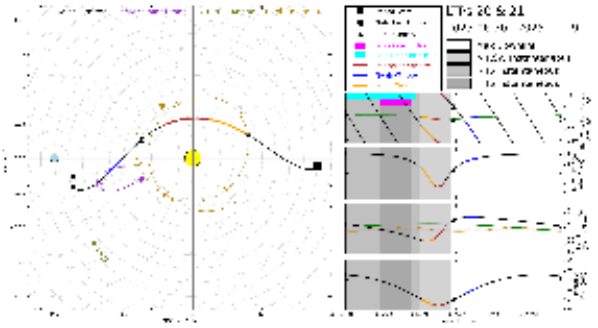

LTPs 10 & 11

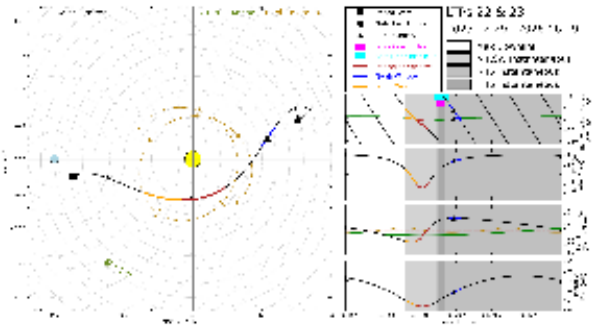

LTPs 12 & 13

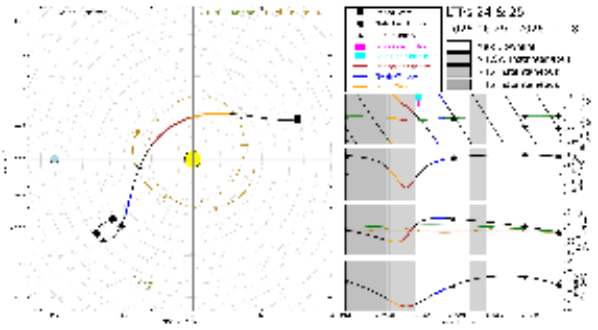

LTPs 14 & 15

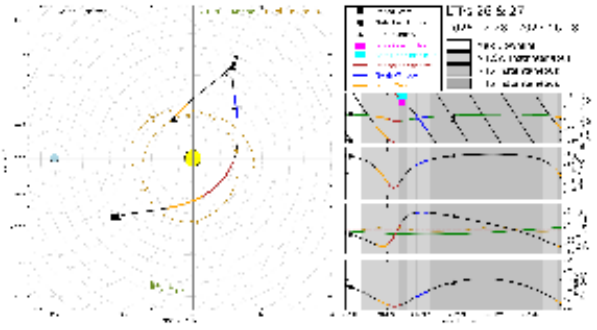

LTPs 16 & 17

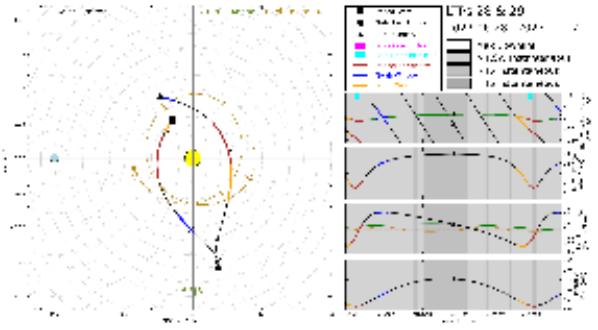

LTPs 18 & 19

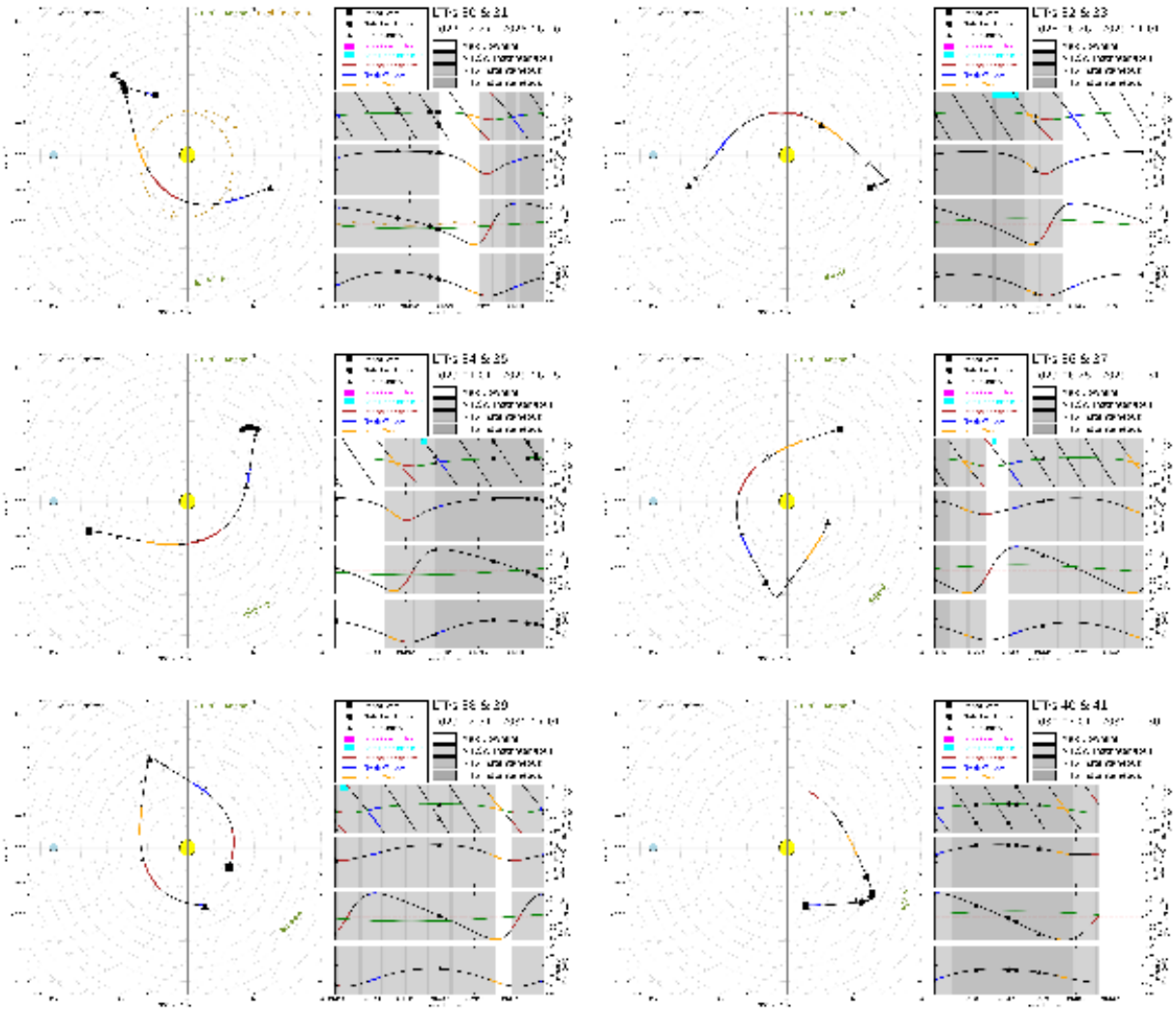

LTPs 20 & 21


LTPs 22 & 23


LTPs 24 & 25


LTPs 26 & 27


LTPs 28 & 29



Animated Versions of the Orbit Plots (Updated September 2021 with RSW and LTP dates for 2022)

- An animated version of the Orbit plot for the entire mission is available : Orbit_Whole_Mission.mp4
- Animated versions per planning period are also available:
  - Cruise: Orbit_GSE_2020H1.mp4, Orbit_GSE_2020H2.mp4, Orbit_GSE_2021H1.mp4, Orbit_GSE_2021H2.mp4
  - Science Phases: Orbit_GSE_2022H1.mp4, Orbit_GSE_2022H2.mp4, Orbit_GSE_2023H1.mp4, Orbit_GSE_2023H2.mp4, Orbit_GSE_2024H1.mp4, Orbit_GSE_2024H2.mp4, Orbit_GSE_2025H1.mp4, Orbit_GSE_2025H2.mp4, Orbit_GSE_2026H1.mp4, Orbit_GSE_2026H2.mp4, Orbit_GSE_2027H1.mp4, Orbit_GSE_2027H2.mp4, Orbit_GSE_2028H1.mp4, Orbit_GSE_2028H2.mp4, Orbit_GSE_2029H1.mp4, Orbit_GSE_2029H2.mp4, Orbit_GSE_2030H1.mp4, Orbit_GSE_2030H2.mp4
  - Zipped Bundle: Orbit_Animations.zip

Animations From 3DView

The following movies show the early mission trajectory, up to Earth GAM 1 when the Nominal Mission starts

- Launch to start NMP, in J2000 frame: SOL_CruiseFeb2020_J2000_50fps_med.mov (3Dview scene file: SOL_CruiseFeb2020_J2000.3dv). N.b. these have not been updated post-launch
- Launch to start NMP, in HEE frame (fixing Sun and Earth): SOL_CruiseFeb2020_HEE_70fps_good.mov (3Dview scene file: SOL_CruiseFeb2020_HEE.3dv) N.b. these have not been updated post-launch

The following movie files are also available, to be run in 3Dview (n.b. these have not been updated post-launch):

- **Solar Orbiter**, Launch to end of mission, in **HEE** frame (fixing Sun and Earth): SOL_Feb2020_HEE_SolarOrbiter.3dv
- **Solar Orbiter and Parker Solar Probe**, from SolO launch (Feb 2020) to end of mission PSP (end Aug 2025), in **HEE** frame (fixing Sun and Earth): SOL_Feb2020_HEE_Solo-Probe.3dv
- **Solar Orbiter**, Launch to end of mission, in **J2000** frame: SOL_Feb2020_J2000_SolarOrbiter.3dv

- **Solar Orbiter and Parker Solar Probe**, from SolO launch (Feb 2020) to end of mission PSP (end Aug 2025), in **J2000** frame: SOL_Feb2020_J2000_Solo-Probe.3dv

You can load the files in the tool through the menu ‘File/New Scene’ and then ‘File/Open File’.
You can create your own scene, e.g. covering the whole mission, through ‘File/New Scene’ and then ‘File/Manage Scene’. You can also generate movies from the chosen scene.