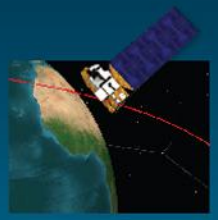
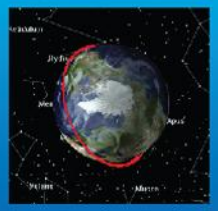
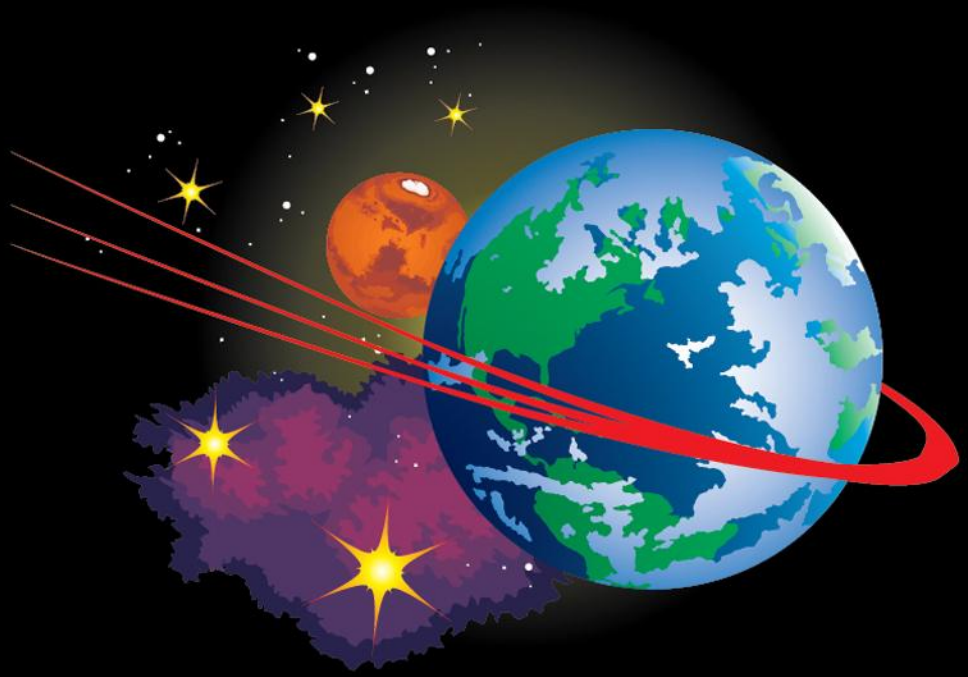
National Aeronautics and Space Administration





www.nasa.gov



Simple Orbit Transfer (extra exercises)

GMAT Fundamentals

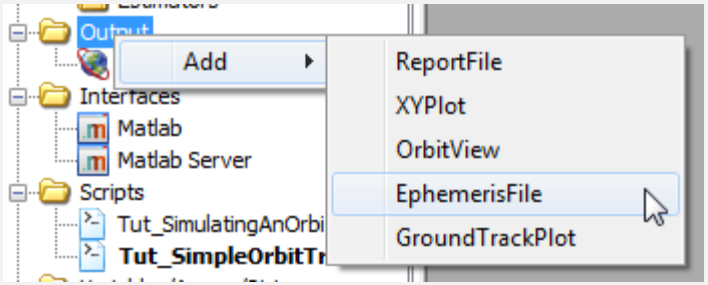
Jason Laing and Mojtaba Abedin

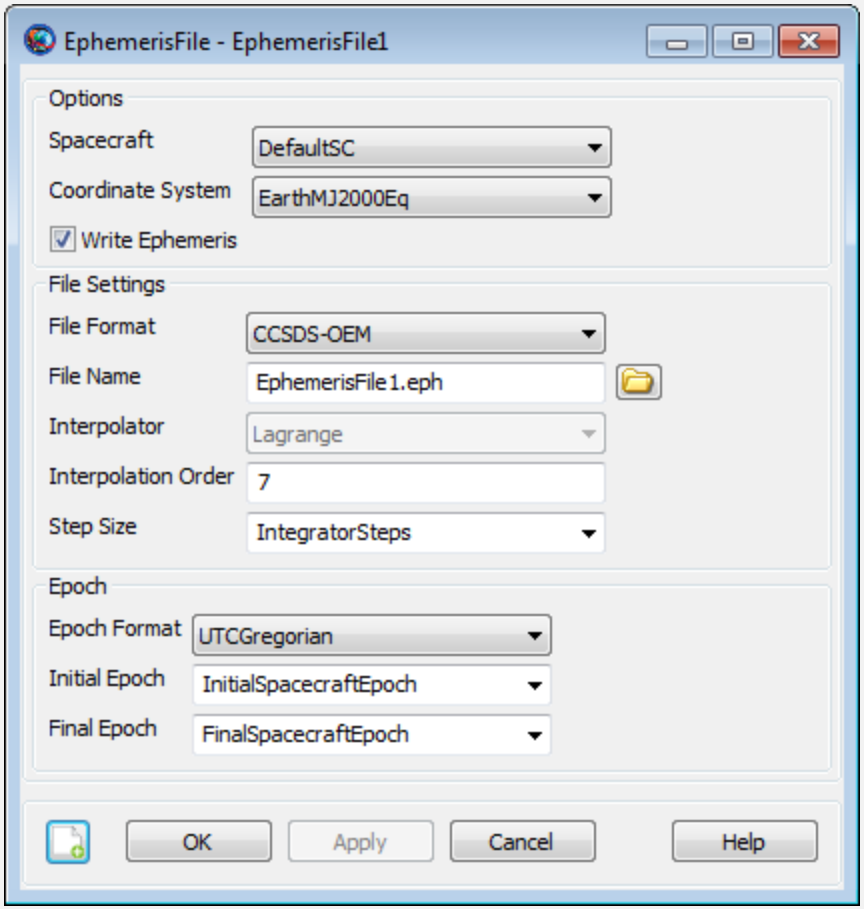
Oct 29, 2014

NASA Goddard Space Flight Center

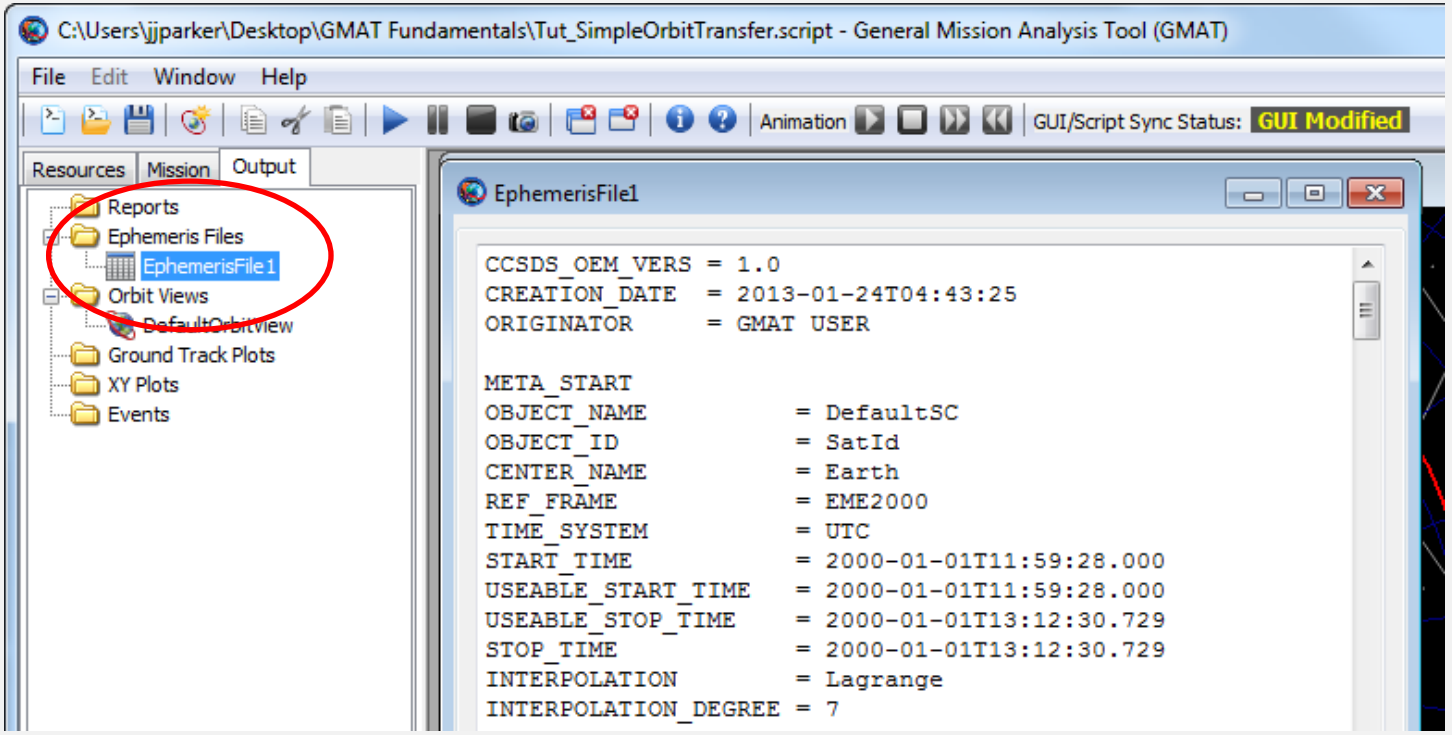
general mission analysis tool

1. Write Ephemeris File



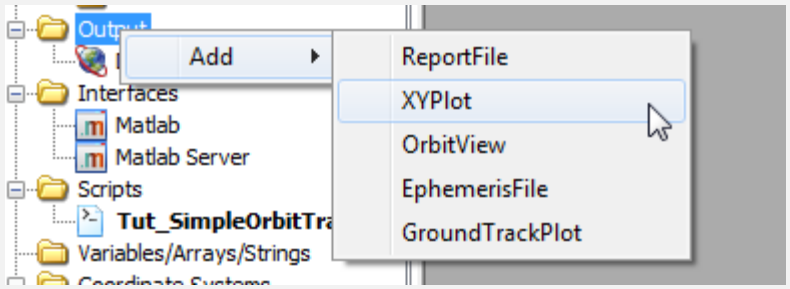


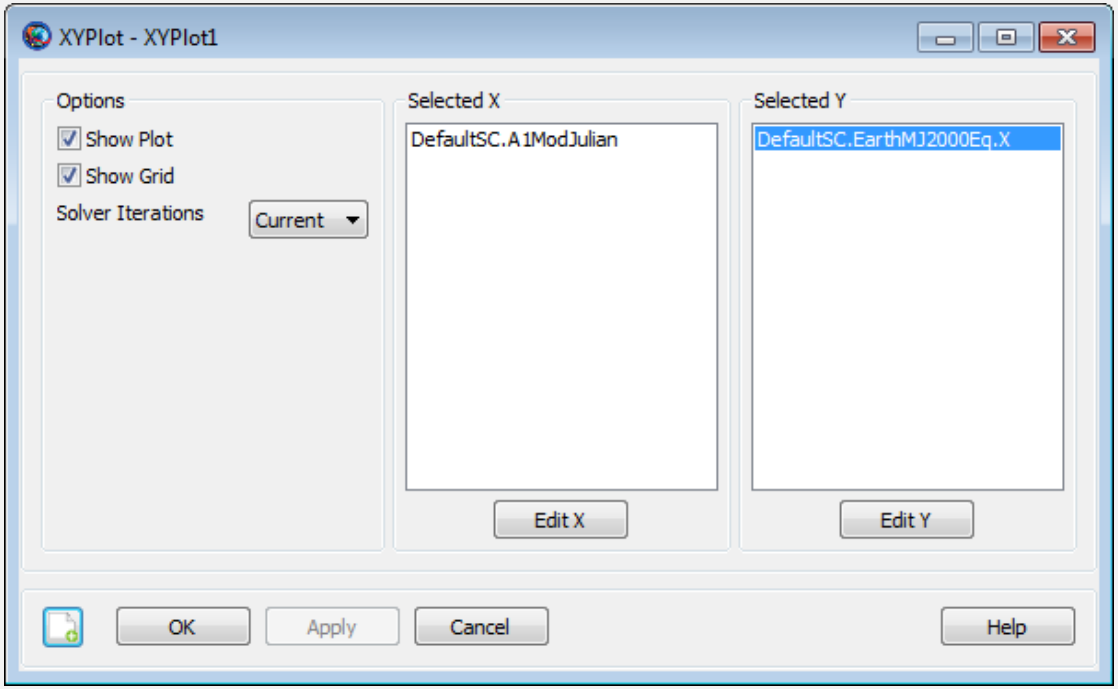
1. Write Ephemeris File



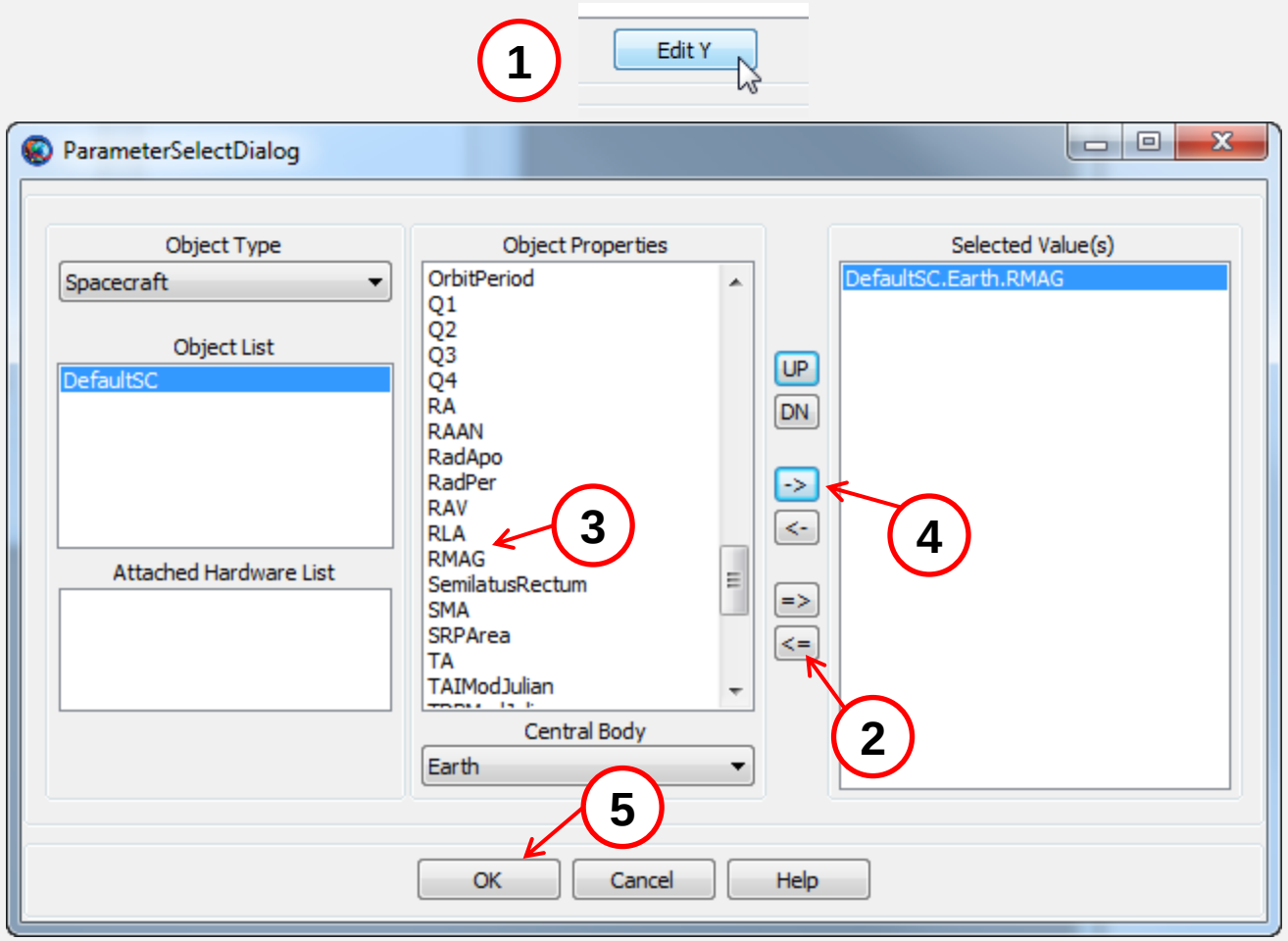

```
Create EphemerisFile EphemerisFile1
EphemerisFile1.Spacecraft = DefaultSC
EphemerisFile1.FileFormat = CCSDS-OEM
```

2. Create Plot

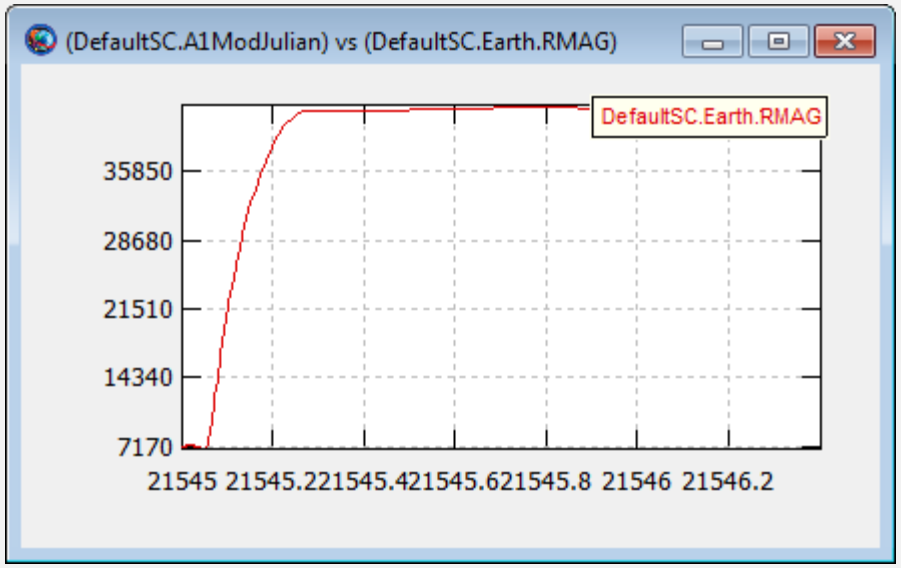




2. Create Plot

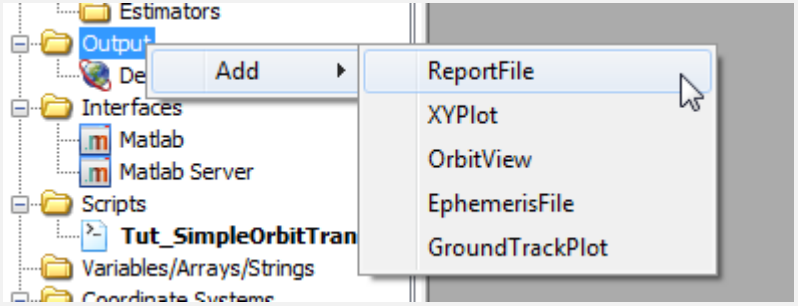


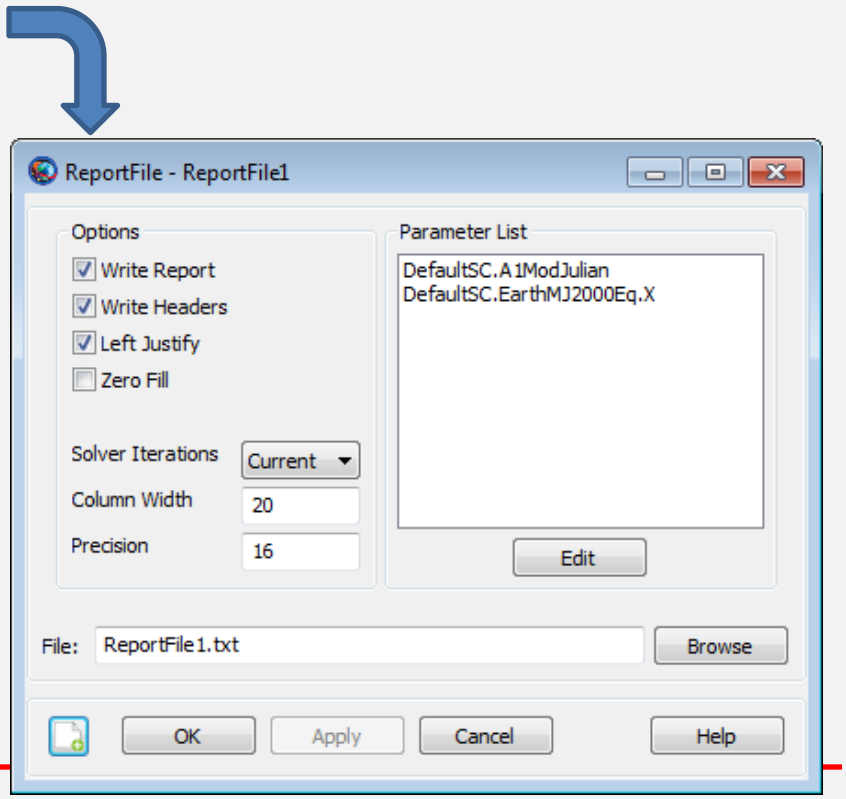
2. Create Plot



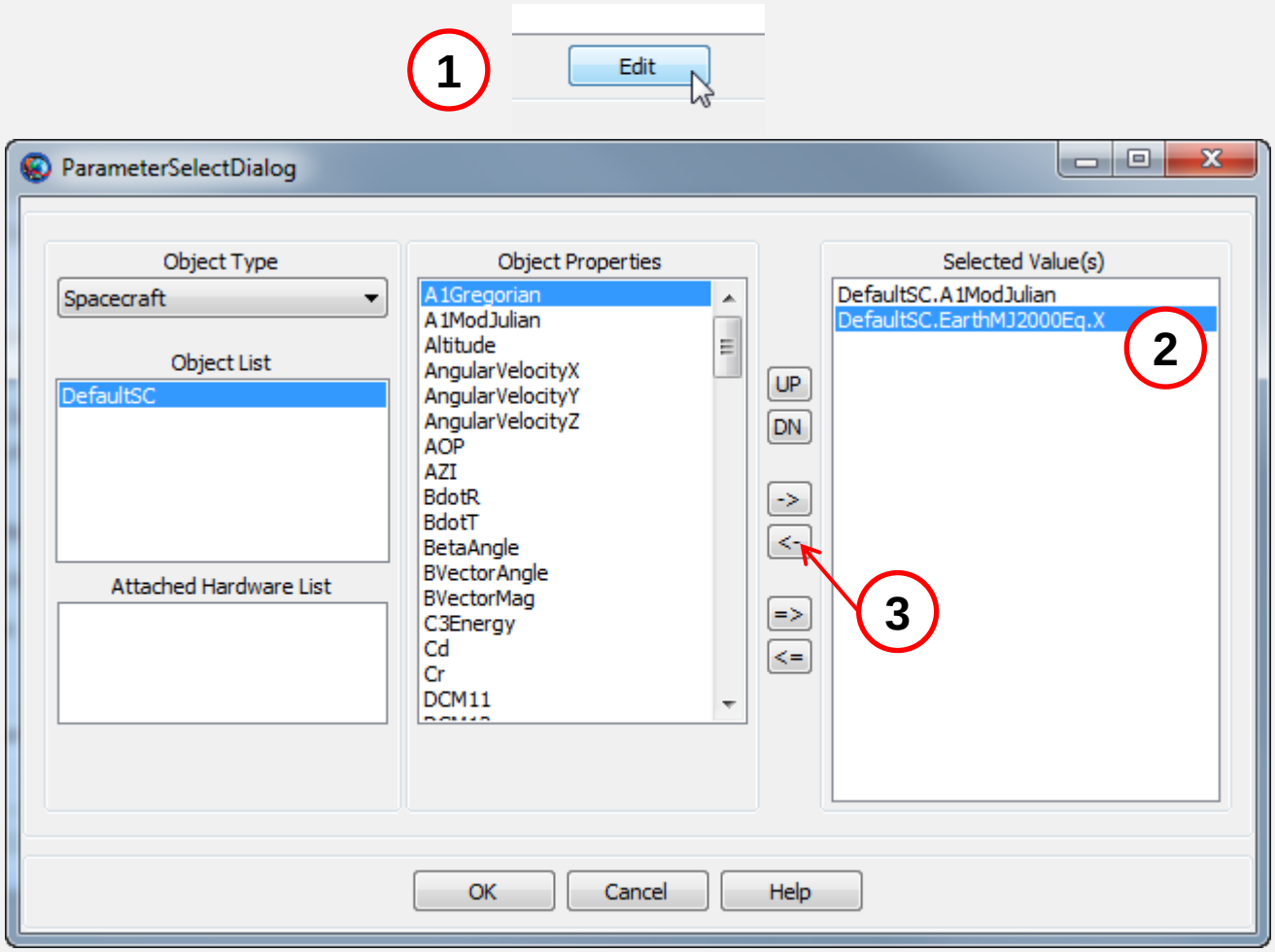

```
Create XYPlot XYPlot1
XYPlot1.XVariable = DefaultSC.A1ModJulian
XYPlot1.YVariables = {DefaultSC.Earth.RMAG}
```

3. Create Propagation Report

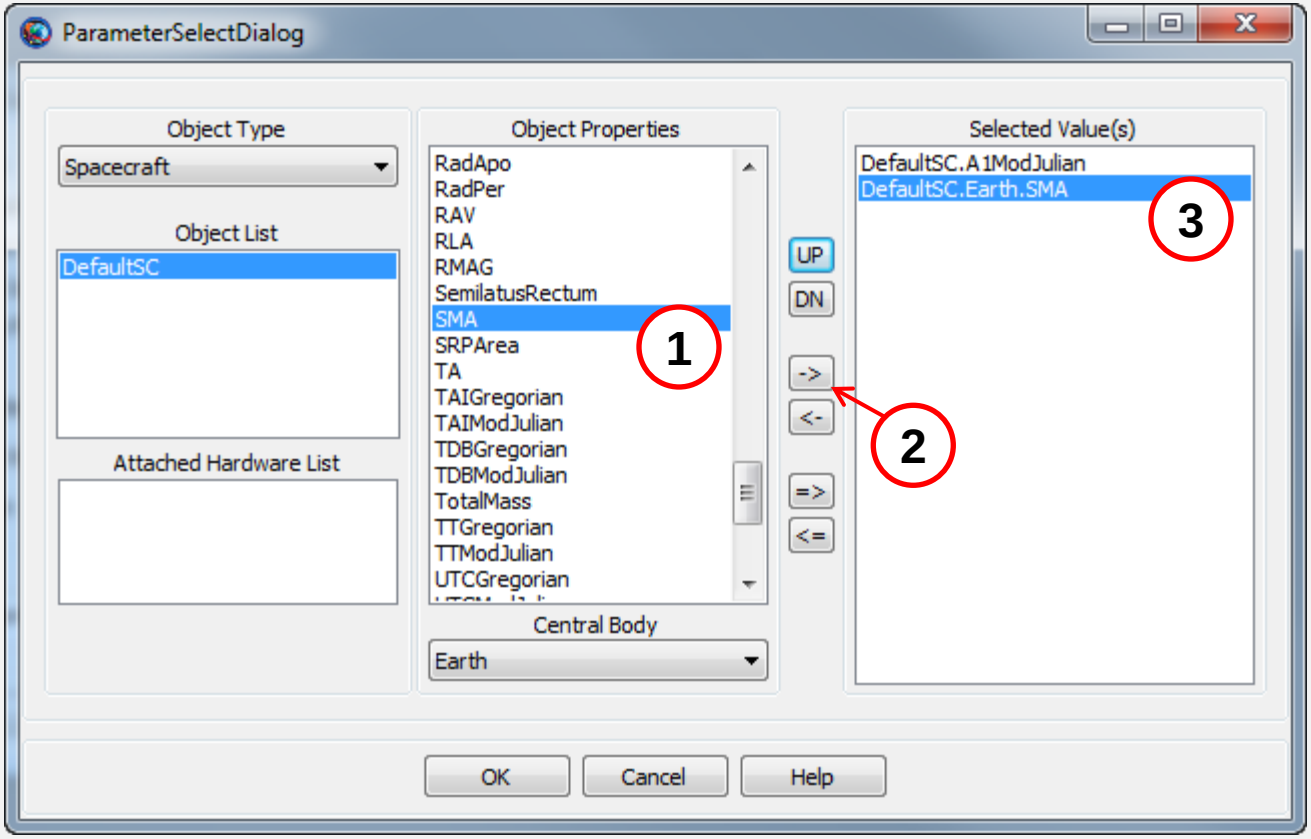




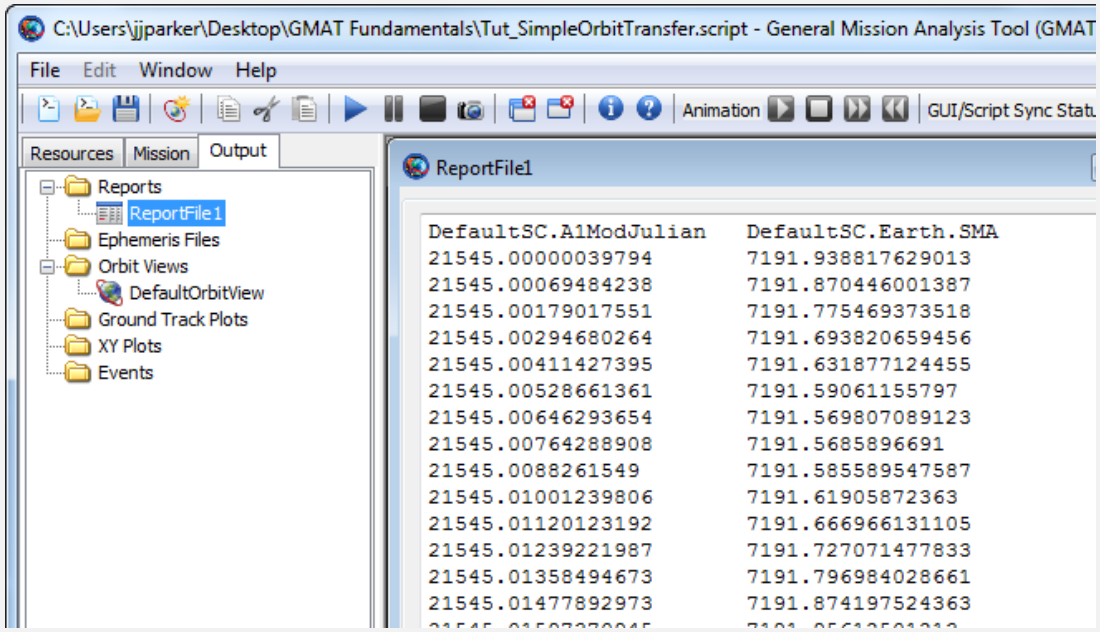
3. Create Propagation Report



3. Create Propagation Report

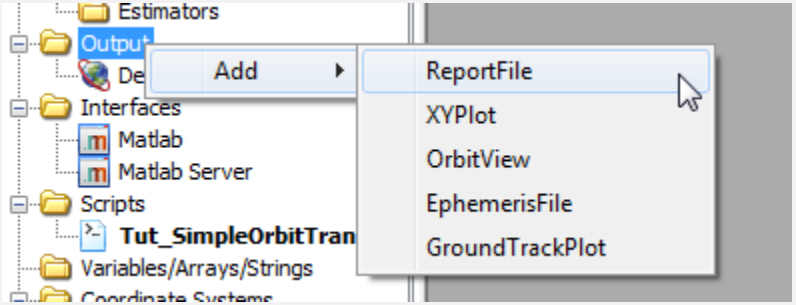


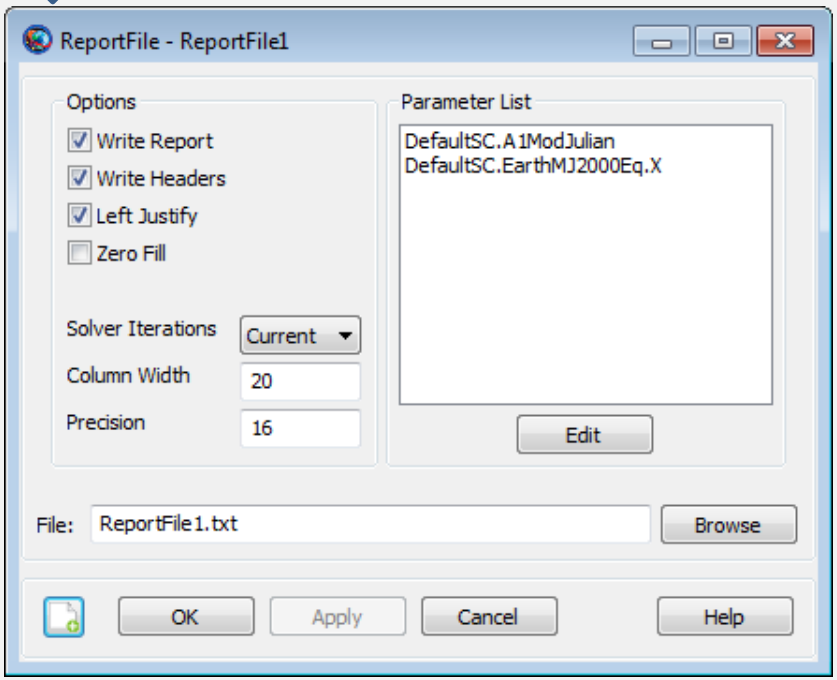
3. Create Propagation Report



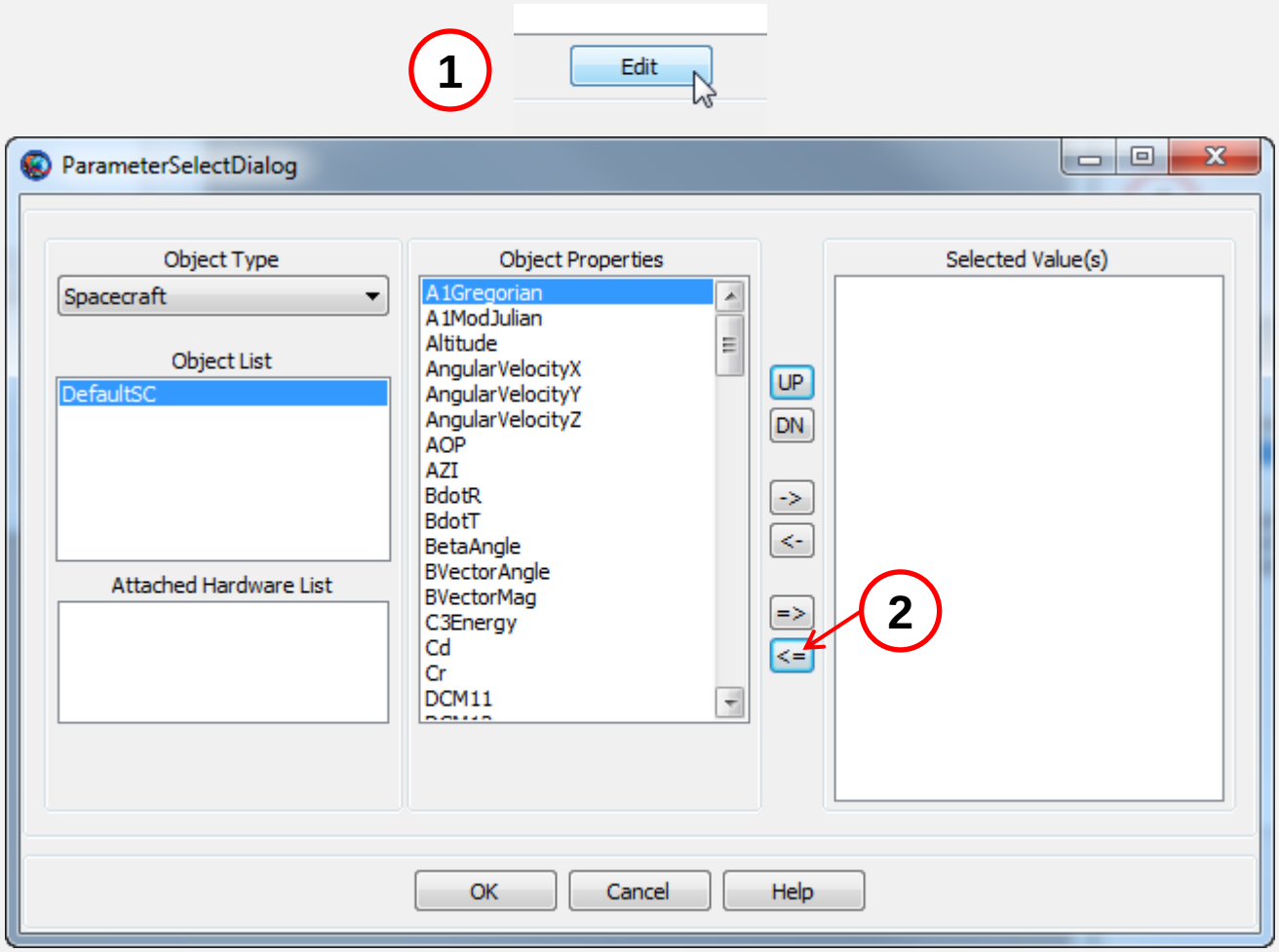

```
Create ReportFile ReportFile1
ReportFile1.Add = {DefaultSC.A1ModJulian, DefaultSC.Earth.SMA}
```

4. Report Values

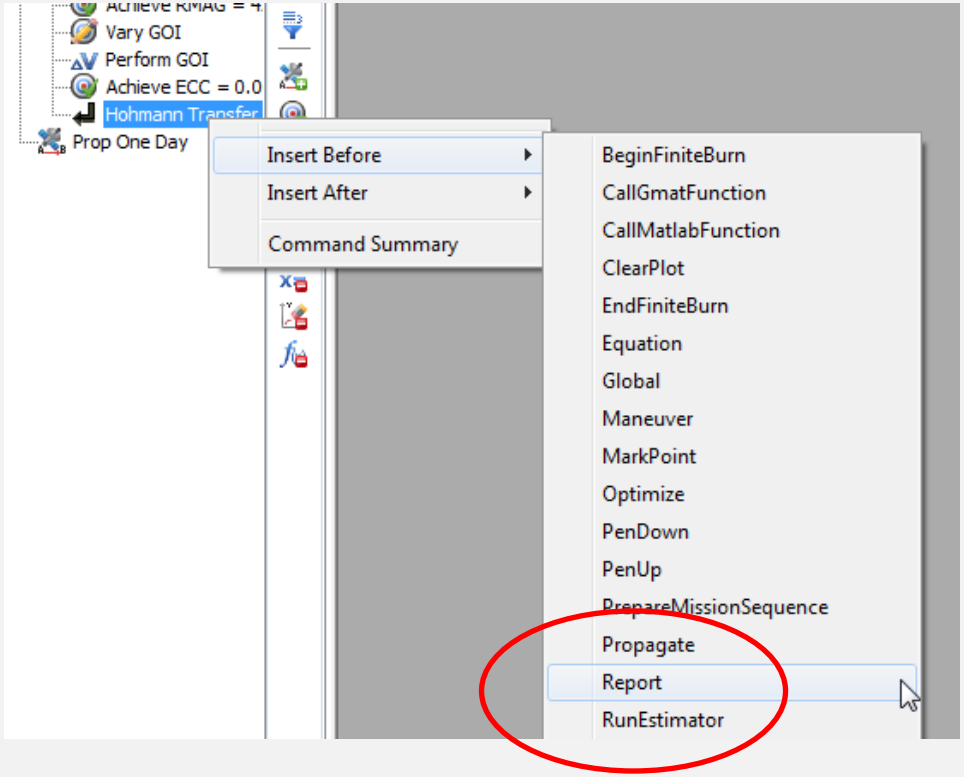


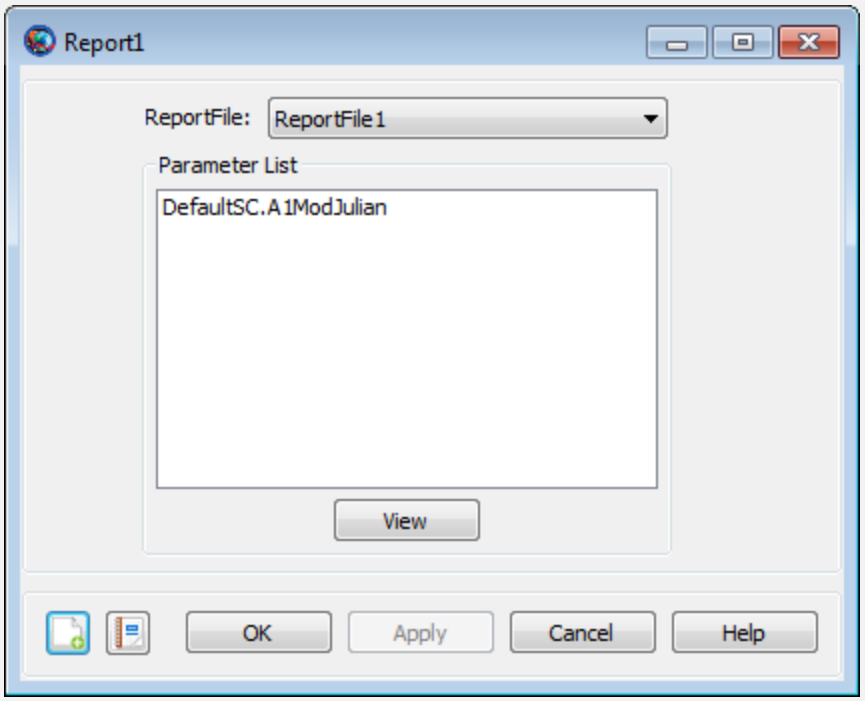


4. Report Values

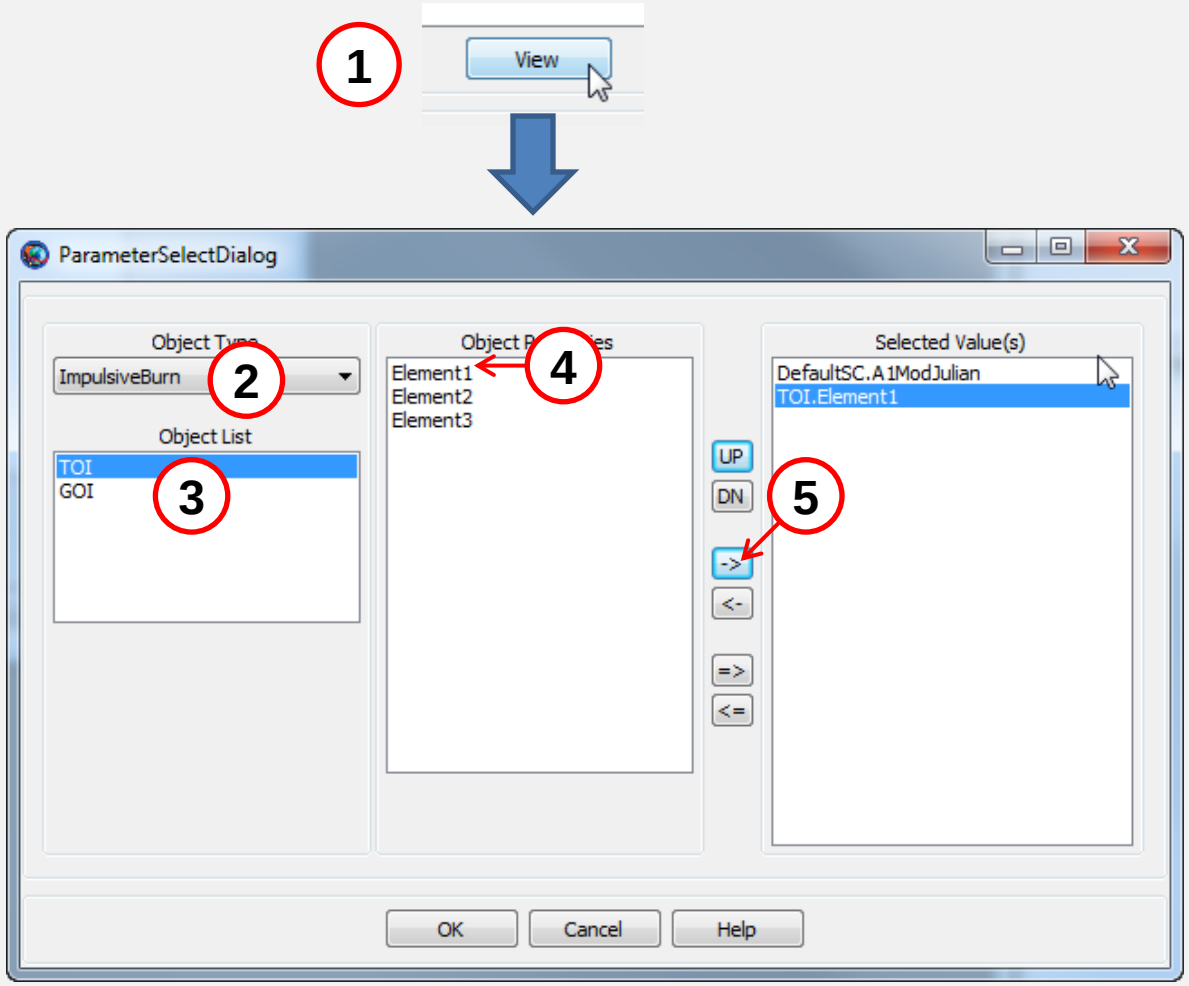


4. Report Values



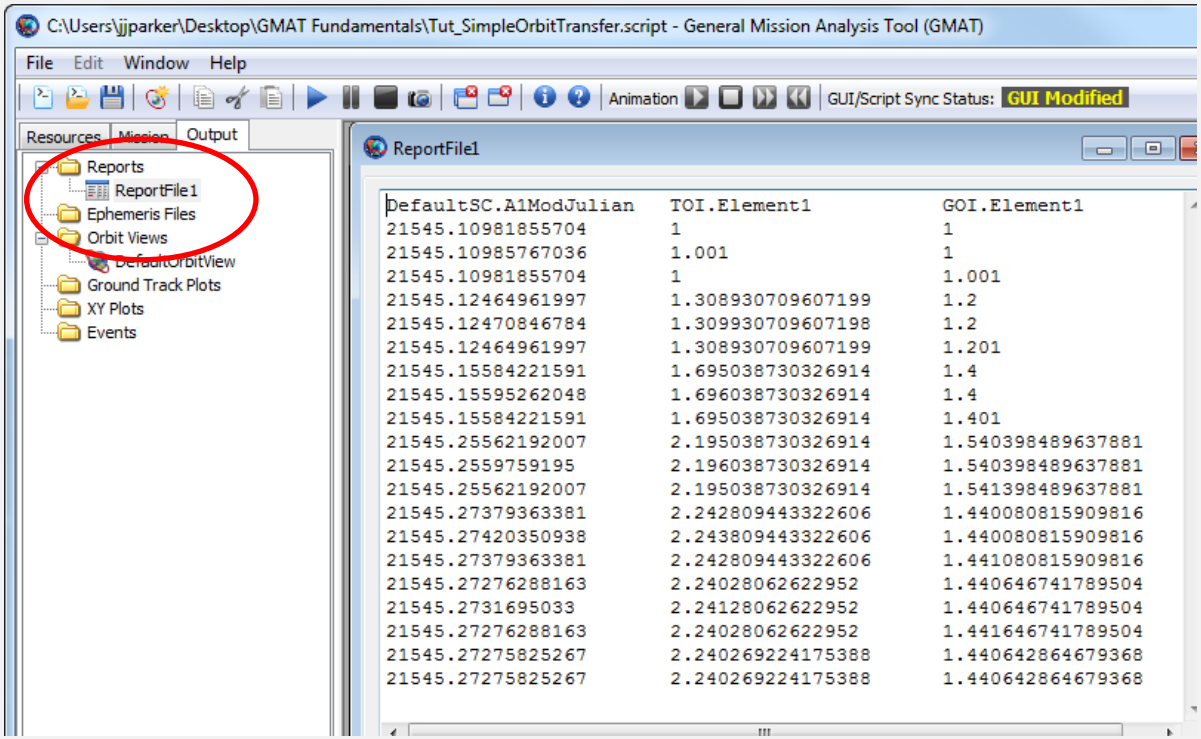


4. Report Values



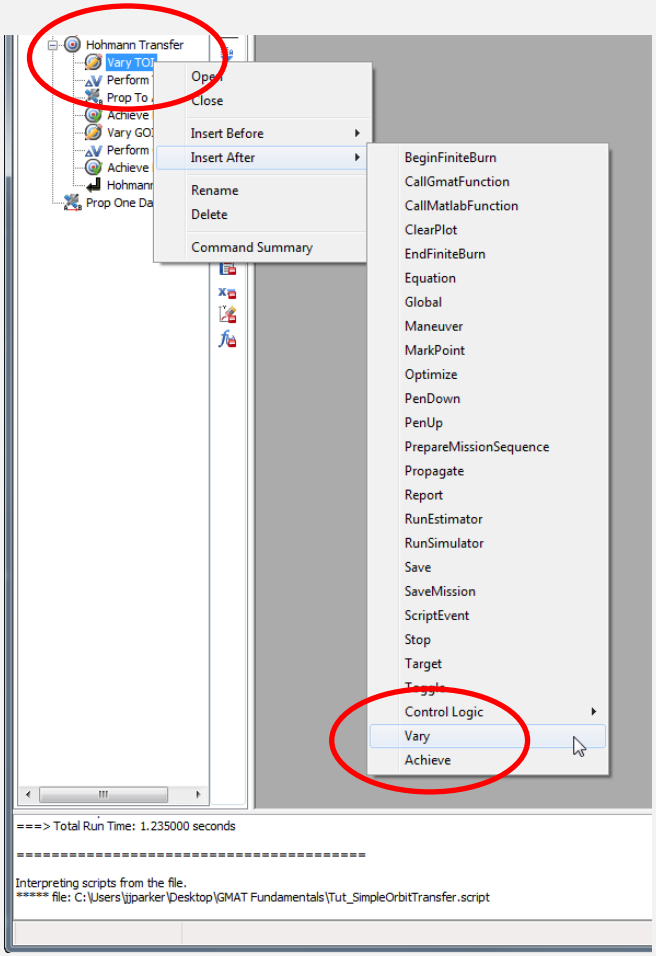
6 Perform same steps to add `GOI.Element1`.

4. Report Values

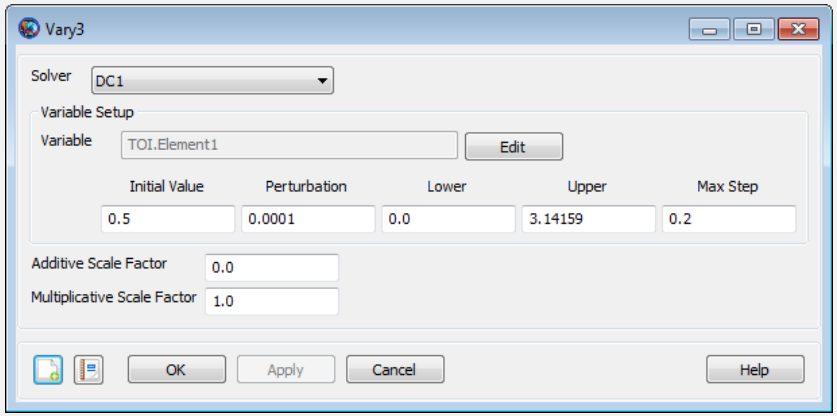



```
Create ReportFile ReportFile1
% ...
BeginMissionSequence
% ...
Report ReportFile1 DefaultSC.A1ModJulian TOI.Element1 GOI.Element1
```

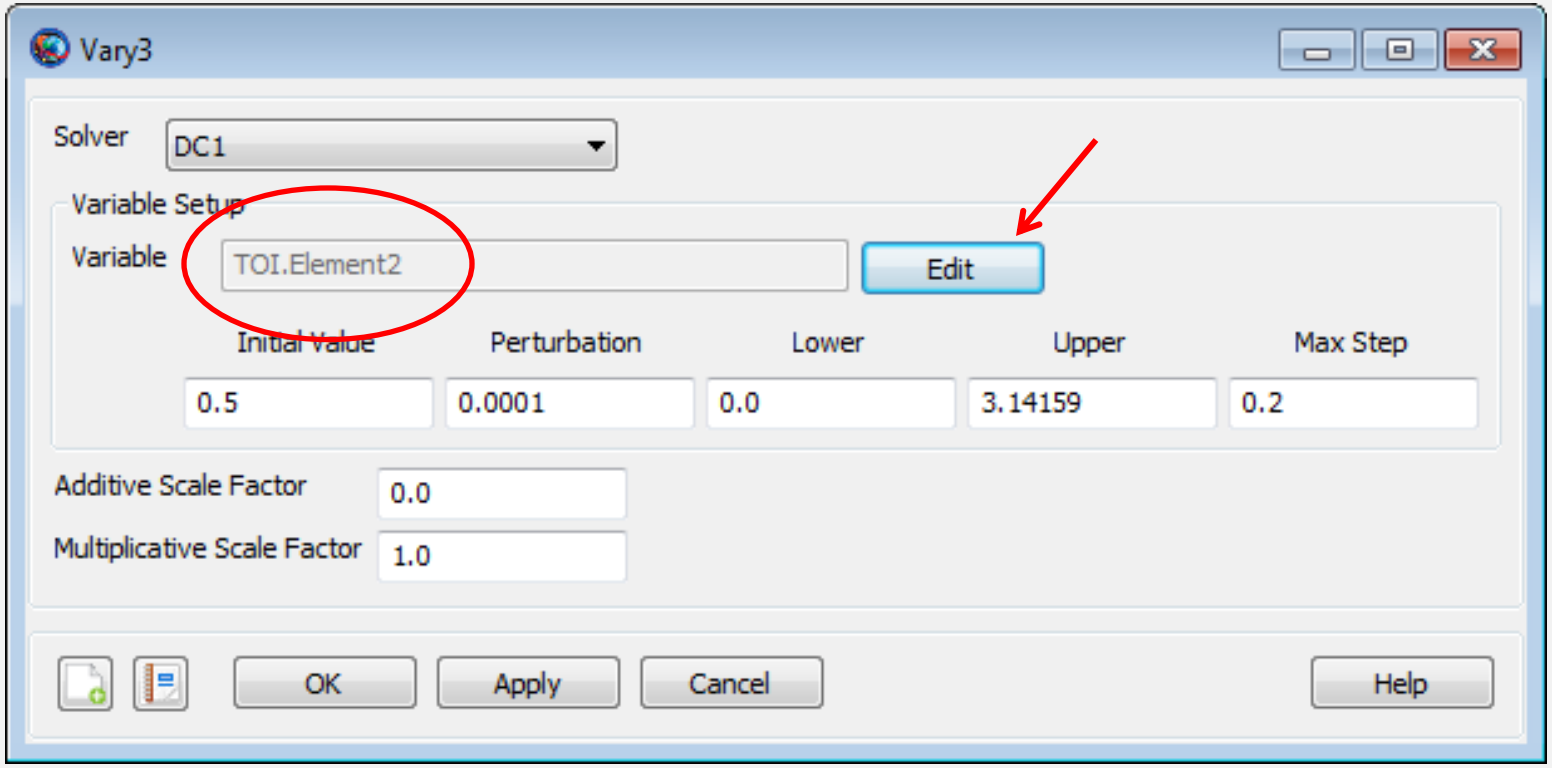
5. Target Inclination



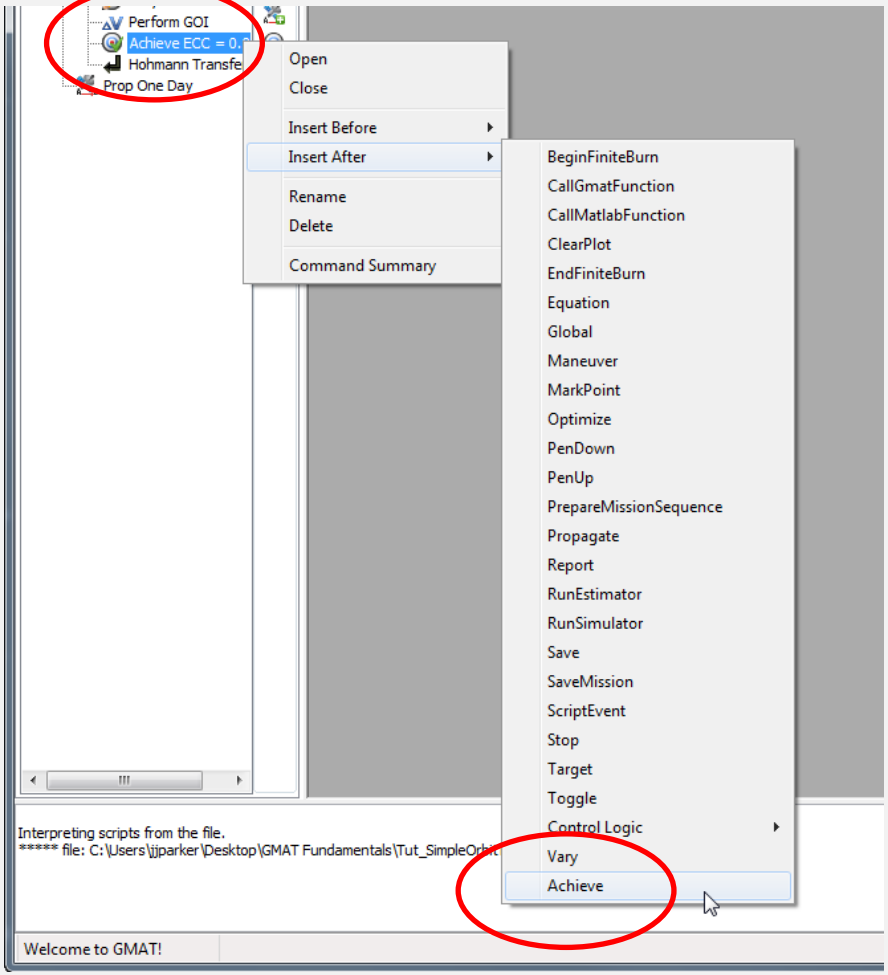
Open new **Vary3**:



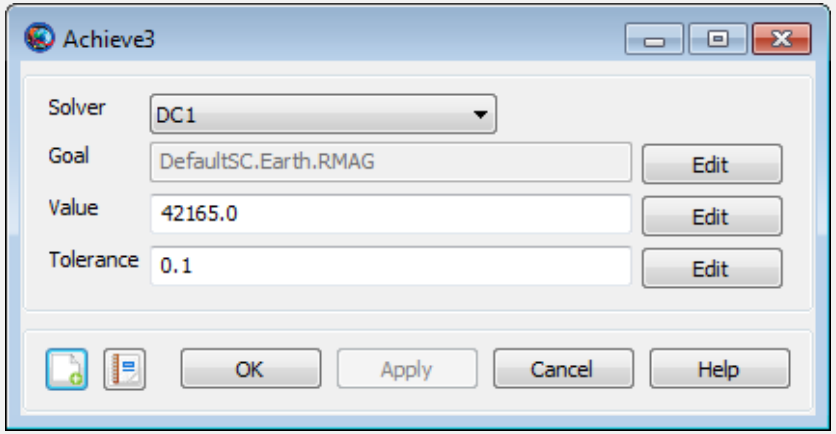
5. Target Inclination



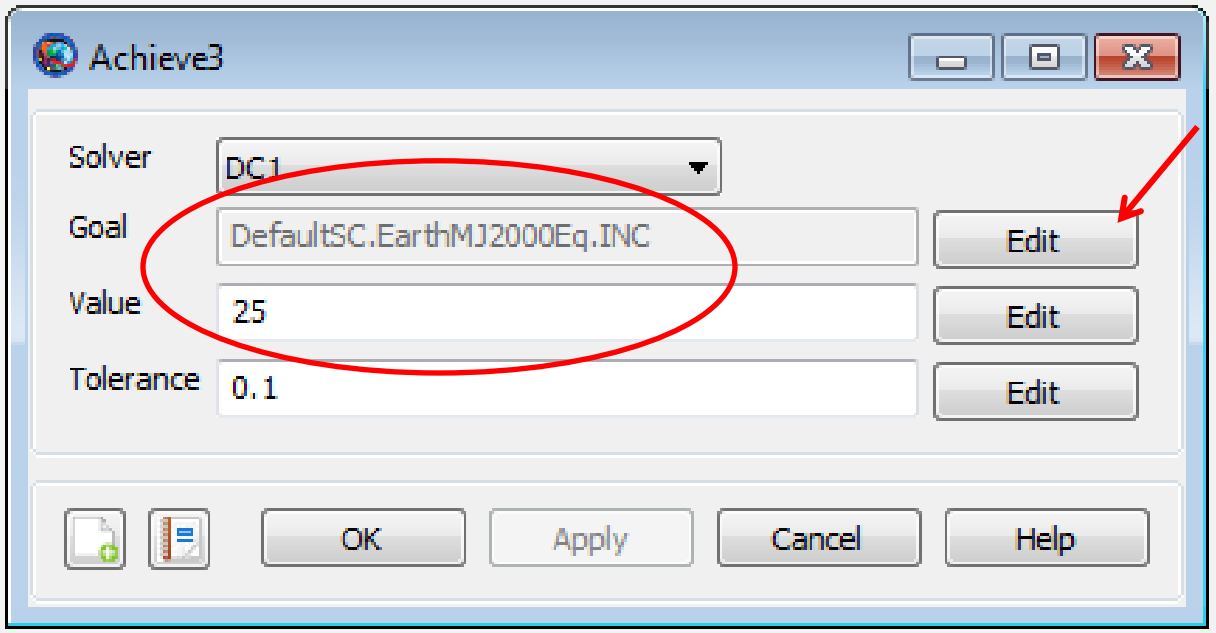
5. Target Inclination



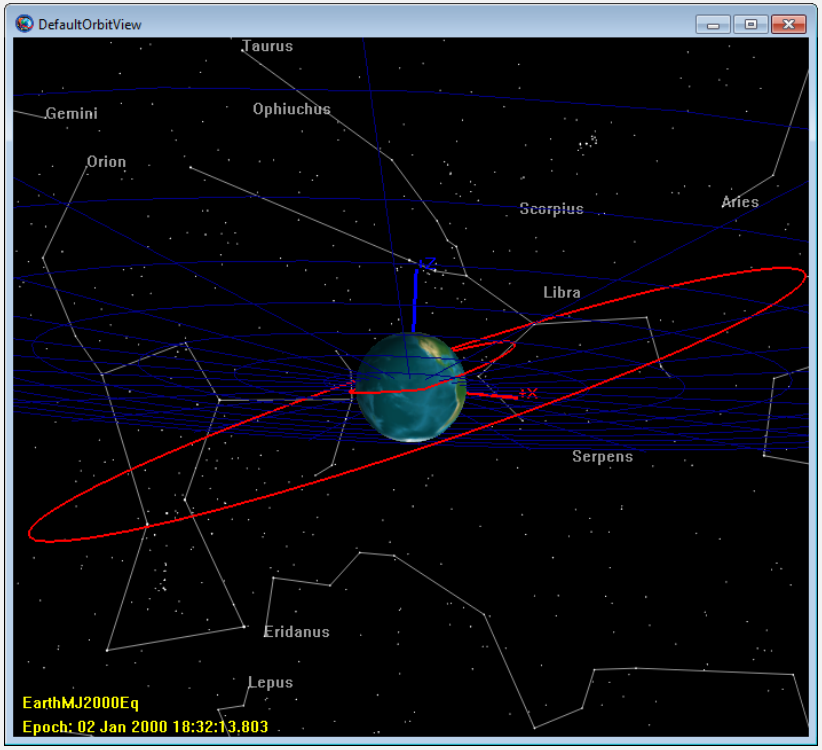
Open new **Achieve3**:



5. Target Inclination



5. Target Inclination




```
Vary DC1(TOI.Element2 = 0.5)
% ...
Achieve DC1(DefaultSC.EarthMJ2000Eq.INC = 25)
```