



Simple Orbit Transfer (using script language)

GMAT Fundamentals
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Oct 29, 2014

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Resources

Create Spacecraft DefaultSC

Create Propagator DefaultProp

Resources

Create Spacecraft DefaultSC

Create Propagator DefaultProp

Create DifferentialCorrector DC1

Resources

```
Create Spacecraft DefaultSC
```

```
Create Propagator DefaultProp
```

```
Create DifferentialCorrector DC1
```

```
Create OrbitView DefaultOrbitView
```

```
DefaultOrbitView.SolverIterations = Current
```

```
DefaultOrbitView.Add = {DefaultSC, Earth}
```

```
DefaultOrbitView.ViewPointReference = Earth
```

```
DefaultOrbitView.ViewPointVector = [ 0 0 120000 ]
```

```
DefaultOrbitView.ViewUpAxis = X
```

Resources

```
Create Spacecraft DefaultSC  
Create Propagator DefaultProp  
Create DifferentialCorrector DC1
```

```
Create OrbitView DefaultOrbitView  
DefaultOrbitView.SolverIterations = Current  
DefaultOrbitView.Add = {DefaultSC, Earth}  
DefaultOrbitView.ViewPointReference = Earth  
DefaultOrbitView.ViewPointVector = [ 0 0 120000 ]  
DefaultOrbitView.ViewUpAxis = X
```

```
Create ImpulsiveBurn TOI  
Create ImpulsiveBurn GOI
```

Mission Sequence

BeginMissionSequence

Propagate 'Prop To Periapsis' ...

DefaultProp(DefaultSC) {DefaultSC.Earth.Periapsis}

Mission Sequence

```
BeginMissionSequence
```

```
Propagate 'Prop To Periapsis' ...
```

```
    DefaultProp(DefaultSC) {DefaultSC.Earth.Periapsis}
```

```
Target 'Hohmann Transfer' DC1
```

```
    % targeter commands here
```

```
EndTarget
```

Mission Sequence

```
BeginMissionSequence
```

```
Propagate 'Prop To Periapsis' ...
```

```
    DefaultProp(DefaultSC) {DefaultSC.Earth.Periapsis}
```

```
Target 'Hohmann Transfer' DC1
```

```
    % targeter commands here
```

```
EndTarget
```

```
Propagate 'Prop One Day' ...
```

```
    DefaultProp(DefaultSC) {DefaultSC.ElapsedSecs = 86400}
```


Targeter

Target 'Hohmann Transfer' DC1

EndTarget

Targeter

```
Target 'Hohmann Transfer' DC1
```

```
Vary 'Vary TOI' DC1(TOI.Element1 = 1, {MaxStep = 0.5})
```

```
Achieve 'Achieve RMAG = 42165' ...
```

```
DC1(DefaultSC.Earth.RMAG = 42164.169)
```

```
EndTarget
```

Targeter

```
Target 'Hohmann Transfer' DC1
  Vary 'Vary TOI' DC1(TOI.Element1 = 1, {MaxStep = 0.5})
  Maneuver 'Perform TOI' TOI(DefaultSC)
  Propagate 'Prop To Apoapsis' DefaultProp(DefaultSC) ...
    {DefaultSC.Earth.Apoapsis}
  Achieve 'Achieve RMAG = 42165' ...
    DC1(DefaultSC.Earth.RMAG = 42164.169)
```

EndTarget

Targeter

```
Target 'Hohmann Transfer' DC1
  Vary 'Vary TOI' DC1(TOI.Element1 = 1, {MaxStep = 0.5})
  Maneuver 'Perform TOI' TOI(DefaultSC)
  Propagate 'Prop To Apoapsis' DefaultProp(DefaultSC) ...
    {DefaultSC.Earth.Apoapsis}
  Achieve 'Achieve RMAG = 42165' ...
    DC1(DefaultSC.Earth.RMAG = 42164.169)

  Vary 'Vary GOI' DC1(GOI.Element1 = 1, {MaxStep = 0.2})

  Achieve 'Achieve ECC = 0.005' ...
    DC1(DefaultSC.Earth.ECC = 0.005, {Tolerance = 0.0001})
EndTarget
```

Targeter

```
Target 'Hohmann Transfer' DC1
  Vary 'Vary TOI' DC1(TOI.Element1 = 1, {MaxStep = 0.5})
  Maneuver 'Perform TOI' TOI(DefaultSC)
  Propagate 'Prop To Apoapsis' DefaultProp(DefaultSC) ...
    {DefaultSC.Earth.Apoapsis}
  Achieve 'Achieve RMAG = 42165' ...
    DC1(DefaultSC.Earth.RMAG = 42164.169)

  Vary 'Vary GOI' DC1(GOI.Element1 = 1, {MaxStep = 0.2})
  Maneuver 'Perform GOI' GOI(DefaultSC)
  Achieve 'Achieve ECC = 0.005' ...
    DC1(DefaultSC.Earth.ECC = 0.005, {Tolerance = 0.0001})
EndTarget
```