

## 6 Week 08

### 6.1 Key concepts

N/A

### 6.2 Important concepts

- Astronomical unit
- Interplanetary trajectory – Strategy (i.e. patched-conic approximations)
- Convention (uppercase/lower case variables)
- Sphere of influence (derivation is an advanced concept)
- Departure from a planet ( $v_d, v_d^\infty$ )
- Heliocentric velocity right after crossing the SOI
- Arrival to a planet ( $v_p, v_a^\infty$ )

### 6.3 Relevant concepts

- The deep space environment, NEO/NEA
- Velocity on an hyperbola
- Aerobraking manoeuvres (Aero-capture, -braking, -entry)
- Phasing angles, waiting time
- Lambert problem for interplanetary flight

### 6.4 Advanced concepts

- Derivation of the sphere of influence
- Locus of possible departure and inclination
- Sensitivity analysis
- B-Plane
- Porkchop plots