LagrangeLaunchMFD v.230706
For Orbiter2016

INSTALLATION
Unzip into your Orbiter root folder as usual.
Activate LagrangeLaunchMFD in Orbiter launchpad "Modules" tab.

ADDITIONAL REQUIRED ADD-ONS
It is strongly recommended to use InterplanetaryMFD and LagrangeMFD to visualise and adjust your trajectory after completing Trans-Lagrange-Insertion (TLI) burn.

InterplanetaryMFD
https://www.orbiter-forum.com/resources/interplanetary-mfd.5500/

LagrangeMFD
https://www.orbiter-forum.com/resources/lagrangemfd-1-5-for-orbiter-2016.2868/

WHAT DOES IT DO?
LagrangeLaunchMFD provides information for launching from Earth to a halo orbit around Sun-Earth L1 or L2.

It does NOT do anything clever like computing stable gravitational manifolds around Lagrange points – it just provides information to achieve a suitable transfer trajectory for a large halo orbit around the selected Lagrange point (L1 or L2 only).

DATA DISPLAY
LAUNCH

Inc.(Equ.)	Required parking orbit inclination (Earth equatorial frame)
	[Warning displayed if inclination is too low for launch latitude]
Azimuth	Required launch azimuth at liftoff
Countdown	Time until next instantaneous launch opportunity – launch at T- 0

TLI

dV(Prograde)	Required dV in prograde direction for TLI burn
Burn Duration	Length of burn computed for maximum throttle on Main Engine
Burn Start	Time until ignition – start at T- 0

BUTTONS

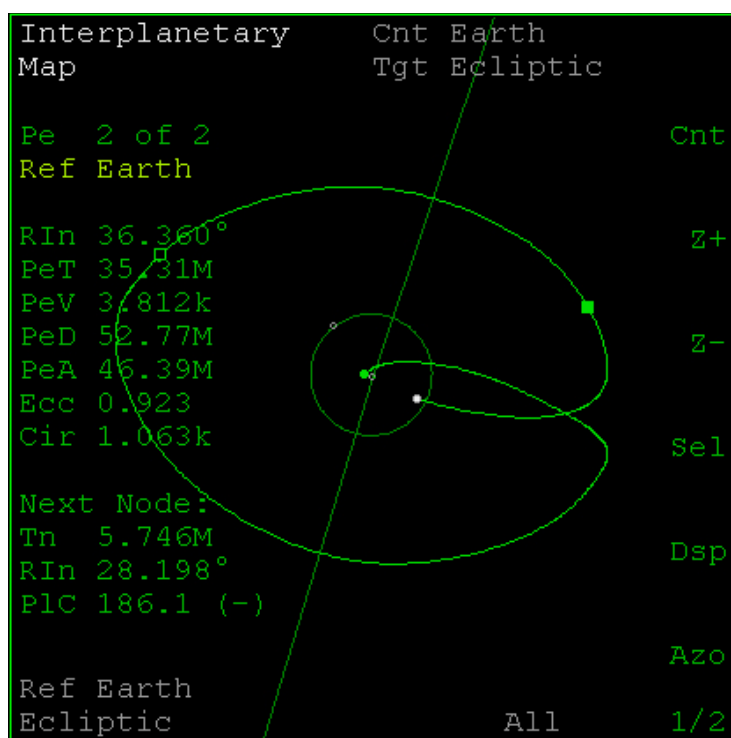|	
[VES]	Select vessel being monitored by LagrangeLaunchMFD
[STS]	Switch MFD On/Off
[LP]	Select Sun-Earth Lagrange Point L1 or L2
[NOD]	Select Ascending Node (Northerly launch azimuth) or
	Descending Node (Southerly launch azimuth)
[PO]	Set planned (circular) parking orbit altitude

Once parking orbit is achieved, TLI burn should be performed while vessel maintains Prograde attitude.

After separation from launch vehicle, trim velocity while monitoring your trajectory on InterplanetaryMFD "Map".
If your trajectory is escaping away from Earth, burn Retrograde (relative to Earth orbit).
If your trajectory is falling back toward Earth, burn Prograde (relative to Earth orbit).

You want a trajectory that forms an "Eye" shape on InterplanetaryMFD "Map"

Once past 100,000km altitude from Earth, use LagrangeMFD display to make course corrections – burn towards or away from Sun. You are aiming for a nice "Lasso" shape trajectory on LagrangeMFD "Rotating Frame" display.

Assuming an accurate TLI burn, you should need very little dV to correct and maintain trajectory (typically < 10m/s).

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