

# SPLAT Baseline Coordinate Definitions

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June 16, 2021

In this document I summarize the coordinate definitions for the three mirrors in the TMA design filename `SPLAT_Base_Fwd.zmx`, which can be found in [https://github.com/patogallardo/zemax\\_tools/tree/master/design\\_analysis/SPLAT\\_baseline\\_20210523/SPLAT\\_Base\\_Fwd.zmx](https://github.com/patogallardo/zemax_tools/tree/master/design_analysis/SPLAT_baseline_20210523/SPLAT_Base_Fwd.zmx). For Step files of this design see folder `coordinate_definitions/step_files`.

Surfaces covered in this document are: Origin, Primary, Secondary, Tertiary and Image surface. These surfaces can be fully defined with a location vector and a rotation angle. Another way of defining these is by using a location vector and a rotation matrix, which is useful for Grasp studies.

## 1 Surface definitions

Table 1 shows the surface definitions for this design. Angle  $\alpha$  refers to the rotation around the X coordinate in degrees.

Surface	X[mm]	Y[mm]	Z[mm]	$\alpha$ [deg]
Origin	0	0	0	0
Prime (M1)	0	0	0	1.554018105E+02
Secondary (M2)	0	5.615000000E+03	4.898000000E+03	1.711645903E+02
Tertiary (M3)	0	8.367000000E+03	4.450000000E+02	-1.708825424E+02
Image	0	9.575761967E+03	5.024441463E+03	1.689266466E+02

Table 1: Surface definition coordinates for the TMA.