

# SPICE Pseudo-observations for SOOPs

In order to more easily model (at a higher level) the observations, for the purposes of putting together the SAP v0, I've made "hybrid observations" which are time-weighted in data rate, so that we can see the rough telemetry production on a daily scale.

The required pseudo-observations, and the SOOPs that require them, are listed in the table below.

(Note that these are not real observations from the instrument's point of view, but they will allow us to model combinations of modes more simply.)

Combination	Corresponding SOOP (s)	Pseudo-Observation Name in Model	Respective durations (hours)	Respective data rates (kbit/s)	Resulting duration (hours)	Resulting data rate, weighted by time (kbit/s)
SPICE Composition Mapping & SPICE Dynamics interleaved	L_BOTH_MRES_MCAD_Farside-Connection L_SMALL_HRES_HCAD_Slow-Wind-Connection L_BOTH_HRES_LCAD_C H-Boundary-Expansion L_SMALL_MRES_MCAD_Ballistic-connection	SPICE_WIND_CONNECTION	1 x Composition = 3.21 10 x Dynamics = 1.97	Composition = 0.42 Dynamics = 17.79	5.18	7.03
SPICE Waves mode & SPICE Composition Mapping interleaved	L_FULL_HRES_HCAD_Eruption-Watch if at limb	SPICE_WAVES_COMP	1 x Composition = 3.21 5 x Waves = 3.38	Composition = 0.42 Waves = 50.34	6.59	26.03
SPICE Composition Mapping raster followed by multiple instances of SPICE CME Watch	L_BOTH_LRES_MCAD_Pole-to-Pole R_SMALL_HRES_HCAD_AR-Dynamics	SPICE_CME_COMP	1 x Composition = 3.21 5 x CME Watch = 1.22	Composition = 0.42 CME Watch = 4.12	4.43	1.44
SPICE Composition Mapping followed by multiple instances of SPICE Dynamics	L_SMALL_HRES_HCAD_Fast-Wind	SPICE_FAST_WIND	1 x Composition = 3.21 22 x Dynamics = (14+8)/10 * 1.97 = 4.33 hrs	Composition = 0.42 CME Watch = 4.12	7.54	2.50