



	Term/heading	Description/Definition
1	Reference Trajectory 110818	Refers to the version of the reference trajectory used for creating the “one pager”; relevant to time and altitude of closest approach (c/a) and other geometrical data. Version is in YY/MM/DD format.
	Revision 9, 140220	See above.
2	Range (km)	distance from spacecraft to Titan’s surface at specified time relative to c/a
3	Angular diameter (degrees)	Angular diameter of Titan at specified time
4	Flyby	All Titan targeted flybys were labeled in order, with a few special exceptions at the start of the mission (T0, TA, TB, T3, T4, T5...). In some cases, indicated in the format revTI_T#, where rev is defined below and T# is the usual Titan flyby (e.g. T105 is the same as 208TI_T105)
5	Mission phase (not labeled; the column between “Flyby” and “Rev”)	Refers to different inclination “phases” of the mission, alternating between orbits highly inclined to the ring plane (e.g. In-1, Inclined-2) and orbits in or near the ring plane (e.g. Equatorial-1, Equatorial-2). F-ring is for near the end of mission.
	Rev	The spacecraft orbital “revolution”, counted from the beginning of the mission, on which this Titan flyby occurred. Revs commence at apoapse.
	SEQ	The spacecraft sequence, counted from the beginning of the mission, in which this Titan flyby occurred. Sequences ranged in duration from 6-10 weeks.
	Date	Calendar date for closest approach to Titan.
	DOY	Day of the year (e.g. January 1 = 001) for closest approach to Titan.
	C/A Time	Time in SCET (Spacecraft Event Time) of closest approach
	Hyd gms	Grams of hydrazine used during this flyby. Yellow background for predicted values; blue background for actual as-flown value.
	Alt	Altitude in km of the spacecraft from Titan’s surface at closest approach

Inbound to c/a (hours) , Outbound from c/a (hours)	Refers to black row immediately below this legend, stretching across the timeline. Events are indicated as epoch relative to the time of closest approach (time 0, not shown on the black bar, but located halfway between -1 and 1). Inbound events approaching closest approach are in negative epoch time; outbound events after closest approach are in positive epoch time. Three heavy black vertical lines show the c/a – 1 hour, c/a, and c/a + 1 hour epochs.
O/B Lit?	Outbound lit? Column indicates if flyby is lit outbound (light yellow) or unlit (grey)
In/Out	In for flybys that occur inbound to periapse; Out for flybys that occur outbound from periapse.
Occ	Indicates if there was an occultation observation. Pink background with a “U” for UVIS stellar occultations; yellow background with a V for VIMS solar occultations; UV for stellar and solar occultations; blue background with an R for an RSS Earth occultation.
LST Dec-Hr	Local Saturnian Time. Position of Titan at c/a relative to Saturn time. 0 corresponds to noon, 12 to midnight.
Dual pb?	blue background shows that a dual playback of a subset of data on the flyby (generally but not always near c/a) was downlinked to Earth twice. In some cases, the dual playback did not work correctly, either from a sequencing error or because DSN negotiations did not support the second data playback opportunity (no station received the data); these explanations are indicated in text to the right of the “altitude” column.
C/A LAT/LON	Latitude and longitude of the nadir point at c/a. Color background of the longitude indicates the location of the spacecraft at c/a in Titan’s hypothetical magnetosphere. Red for nose, blue/yellow for flank out/in green for wake.
Phase @ C/A	phase angle relative to the Sun to indicate illumination (full-on Sun is 0 degrees; midnight is 180 degrees)

Flyby Timeline Legend	
Colored Horizontal bars	indicate which instrument had pointing control of the spacecraft at that time. Color scheme follows.
Pink	CIRS
Yellow	VIMS
Purple	Science Planning (generally downlink periods). If labeled with C/G/M70, refers to location of DSN station used for downlink (Canberra, Goldstone, Madrid)
Grey	ISS

	Light Green	CAPS (CAPS time reallocated after instrument was turned off; indicated in text to the right of the altitude column)
	Dark Green	UVIS
	Light Blue	RSS
	Goldenrod	RADAR
	Brown	INMS
	Dark Blue	Navigation team
	Red	Non-Titan discipline pre-integrated event (PIE), e.g. a Rings discipline PIE.
	Vertical hash marks	indicate that the data for that observation was lost.
	Happy faces	immediately to the right of the Altitude column indicates that this flyby was one of the highest science priorities for the instrument indicated by the color of the happy face. These observations were nicknamed “10-pointers”, terminology used during the Titan jumpstart for the XM (Extended Mission, AKA Equinox) and XXM (Extended Extended Mission, AKA Solstice) Mission. There were up to two such high-priority 10-pointers per instrument in XXM, one per instrument in XM.
	Blue train engines	indicate an “engine” day with Titan observations (mostly ISS) taking place the day before the usual end of a Titan flyby segment. Details of the timing are not shown on the one-pager.
	Red train cabooses	indicate a “caboose” day with Titan observations (mostly ISS) taking place the day after the usual end of a Titan flyby segment. Details of the timing are not shown on the one-pager.
	RSS LGA Opportunities	flybys identified by RSS where the Low Gain Antenna could possibly be used to obtain RSS gravity data. Only one RSS LGA was actually utilized.
	OD dead time	Orbit Determination dead time, intervals of 15 minutes or less which are used to bracket most of the activities in a targeted flyby so that any shifts in timing or trajectory introduced by later revisions long after initial planning of the timeline can be absorbed, keeping the timing of all activities in epoch-relative terms.
	OpMode	Operational Mode, allocating power to various subsystems.