



TIME

What is JD (Julian Date)





What is Julian Date

Overview

Understand Julian Dates, how they are used, how they were founded.

Julian Day Calendar																																
After the Month of February add one to the Day Number for Leap Years; 2008, 2012, 2016, 2020, 2024, 2028, 2032, 2036, 2040.....																																
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Jan	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020	021	022	023	024	025	026	027	028	029	030	031	
Feb	032	033	034	035	036	037	038	039	040	041	042	043	044	045	046	047	048	049	050	051	052	053	054	055	056	057	058	059	060			
Mar	060	061	062	063	064	065	066	067	068	069	070	071	072	073	074	075	076	077	078	079	080	081	082	083	084	085	086	087	088	089	090	
Apr	091	092	093	094	095	096	097	098	099	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120		
May	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	
Jun	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181		
Jul	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	
Aug	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	
Sep	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273		
Oct	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	
Nov	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334		
Dec	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	



What is Julian Date

What is a Julian Date

Julian Dates (abbreviated JD) are a continuous count of days, and fractions of days, since noon Universal Time on January 1, 4713 BC (on the Julian calendar).

Due to this origin day, the numbers for JD are large.

The calendar started at 0 at noon on January 1st 4713 B.C.

Each day adds 1 to the count with partial days adding a partial count. For example:

12 hours adds .5 to the count

3 hours adds .125

18 hours and 30 min. adds .77083

As an example, July 11, 2018 at 12:00 UTC is: 2458311.000.

6 hours later it was: 2458311.250

Julian Date			
Julian day at noon, UT, on March 1st			
Year	Julian day	Year	Julian day
1800	2378556	1940	2429690
1820	2385861	1950	2433342
1840	2393166	1960	2436995
1860	2400471	1970	2440647
1880	2407776	1980	2444300
1900	2415080	1990	2447952
1920	2422385	2000	2451605



What is Julian Date

Online Resources

United States Navy Julian Date Converter:

<http://aa.usno.navy.mil/data/docs/JulianDate.php>

JULIAN DATE CONVERTER

Calendar date to Julian date

Year: Month: Day: ☒ AD ☐ BC

Hour: Minute: Second: Universal Time (UT1)

Julian date to Calendar date

Julian Date:



What is Julian Date

Modified Julian Calendar (MJD)

Developed by the Smithsonian Astrophysical Observatory in 1957 to record the orbit of Sputnik on an older computer.

The modified Julian calendar has 2 primary benefits

- The Julian day number is reduced in length by at least 2 digits

- The day begins at midnight instead of noon

The modified Julian calendar day equals the Julian calendar day minus 2400000.5

Zero is now midnight Nov. 17, 1858

All dates there after are consecutive just like the Julian Calendar



What is Julian Date

Summary

Double Stars and RA/Dec coordinate positions still use JD as a primary format.

Other areas of astronomical science that need more precision have resorted to other methods as opposed to the JD system.



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Questions?