

The table below is a list of the Great Conjunction between 1583 and 2100. 'T' at leftmost column indicates a triple conjunction. The orbital inclination of Saturn is 1.2 degree greater than that of Jupiter. But two planets approach much closely when the Conjunction take place around 307° and 127° in heliocentric longitude where apparent orbits of two planets are crossing each other.

Date	Heliocentric longitude	Geocentric longitude	R.A.	Dec.	Angular distance	Elongation from Sun
2100/ 9/24	211°08'	206°34'	13h40.2m	-9°16'	1°18'	25°
2080/ 3/15	304°12'	311°55'	20h58.0m	-17°38'	0°06'	44°
2060/ 4/10	68°37'	61°16'	3h57.1m	+19°49'	1°09'	40°
2040/11/ 5	194°37'	198°58'	13h11.7m	-6°24'	1°14'	25°
2020/12/21	306°02'	300°26'	20h11.0m	-20°31'	0°06'	30°
2000/ 5/31	49°59'	53°21'	3h24.7m	+17°48'	1°11'	17°
T→ 1981/ 1/14	180°07'	190°13'	12h39.7m	-2°48'	1°09'	104°
T→ 1981/ 2/19	182°50'	189°23'	12h36.9m	-2°19'	1°09'	141°
T→ 1981/ 7/30	195°04'	185°56'	12h23.7m	-1°15'	1°12'	58°
1961/ 2/18	288°53'	295°06'	19h48.4m	-21°17'	0°14'	35°
T→ 1940/ 8/15	33°21'	45°02'	2h51.8m	+15°09'	1°15'	98°
T→ 1940/10/11	38°35'	43°28'	2h45.8m	+14°32'	1°17'	155°
T→ 1941/ 2/20	50°32'	39°56'	2h31.3m	+13°54'	1°21'	68°
1921/ 9/14	178°44'	177°33'	11h52.7m	+1°58'	1°02'	6°
1901/11/28	290°46'	283°54'	19h00.5m	-22°57'	0°27'	39°
1881/ 4/22	32°34'	32°32'	2h02.8m	+11°25'	1°18'	1°
1861/10/25	161°57'	169°08'	11h21.7m	+5°15'	0°52'	43°
1842/ 1/25	273°58'	278°49'	18h38.4m	-23°04'	0°32'	27°
T→ 1821/ 6/25	14°34'	25°30'	1h36.4m	+8°43'	1°16'	68°
T→ 1821/11/23	28°25'	21°11'	1h20.5m	+6°54'	1°20'	141°
T→ 1821/12/23	31°11'	20°23'	1h17.3m	+6°45'	1°22'	109°
1802/ 7/21	162°23'	155°44'	10h31.7m	+10°23'	0°42'	38°
1782/11/ 5	275°51'	268°08'	17h51.8m	-23°25'	0°44'	45°
1762/ 3/22	15°36'	13°21'	0h50.8m	+4°16'	1°15'	11°
1742/ 9/ 1	145°26'	147°33'	10h00.2m	+13°07'	0°30'	12°
1723/ 1/ 5	259°26'	263°23'	17h31.3m	-22°58'	0°48'	22°
1702/ 5/26	357°34'	7°27'	0h29.3m	+1°52'	1°09'	57°
T→ 1682/10/25	129°01'	139°20'	9h27.9m	+15°41'	0°16'	73°
T→ 1683/ 2/ 7	137°19'	136°55'	9h18.8m	+16°47'	0°12'	178°
T→ 1683/ 5/19	145°13'	134°41'	9h09.8m	+17°22'	0°17'	76°
1663/10/18	261°19'	253°11'	16h47.2m	-22°06'	0°59'	48°
1643/ 2/28	359°10'	355°58'	23h46.9m	-2°37'	1°05'	16°
1623/ 7/17	129°03'	126°40'	8h36.9m	+19°13'	0°05'	13°
1603/12/19	245°13'	248°38'	16h28.0m	-21°13'	1°01'	19°
1583/ 5/ 6	341°21'	350°52'	23h28.2m	-4°38'	0°57'	54°

The following three points are interesting:

- **Angular distance is 0.84°(50 arcmin.) in average. Distant conjunction is more frequent.**

Maximum distance is 1.2°, but 19 conjunctions exceeded median of 0.6°(36 arcmin.).

(Triple conjunction is counted as one time.) This is because the following reason. Angular distance is distributed as a sine curve against ecliptic longitude. The probability of $\sin\theta \leq 0.5$ is one third, since total range of θ is 120° , that is, $0^\circ \pm 30^\circ$ and $180^\circ \pm 30^\circ$.

- **The Great Conjunction tends to take place near the sun.**

Except for cases of triple conjunction, most of values of elongation from the sun are small. The Great Conjunction hardly takes place near 120° of elongation where the planets are stationary. Because relative motion between Jupiter and Saturn reaches the maximum at solar conjunction, So, the Great Conjunction of two planets is more frequent near the sun.

- **Triple conjunction is rare event. Only 4 times in 500 years.**

As I described in previous topic, the Great Conjunction tends to be close to solar conjunction, when relative speed of two planets become fastest. It seems that the frequency of the Great Conjunction is a one-sixth (once in 120 years). The next triple conjunction will be in 2279, 250 years later. And 1821 case was extremely rare, because it was triple conjunction in equatorial coordinate system but was NOT triple in ecliptic coordinate system.

By the way, we change the focus to 1623 case. It was on July 17 1623 and a little closer than this time. But the elongation from the sun was only 13° , so its condition was much poorer than this time.

Was there anyone who observed the conjunction? It had been only 14 years since Galileo Galilei observed Jupiter in 1609. The telescope of those days was simple and small, and there was neither achromatic lens nor reflector. The belt/zone of Jupiter and ring of Saturn had not been found yet, though Galilean satellite had been discovered. There may have been any person who watched it with naked eye, but I don't think that it was observable with telescope of those days.

Therefore, it is probable that we are the first persons who saw Jupiter and Saturn in the same telescopic field of view through a telescope of over 200 magnifications.