

upper-case double letters, as AA through AZ, BB through BZ, and on to QZ, leaving out J. Inevitably, one day one constellation produced enough variables to exhaust these 334 letter combinations. Yielding to the need for increased simplicity, astronomers decided to continue with V335 and V336. There now is a V4100 Sagittarii.

Exceptions to this complex system still remain; if a star had already been named before someone discovered its variation, the old name, like Omicron Ceti and γ Herculis, would remain. Also, provisional designations of “Nova Cygni 1975” or “Nova Vulpeculae 1984 No. 2,” are assigned to novae before their permanent titles are bestowed on them.

9.3 Date and time

Recording accurately when you observed a star is extremely important. If you are comfortable simply recording an observation as September 21, 1988, 22:05 EST, then do that, but be consistent. Designed by Joseph Justus Scaliger in 1582, the Julian day system is a different way of recording time that enables us to compare behavior patterns of stars over periods of years. Julian day 1 was assigned to have occurred at noon on January 1, 4713 BC. This arbitrary date happened to mark the start of three independent cycles of Sun and Moon phenomena as well as a political interval of tax collection. Although Table 9.1 lists Julian days for noon on January 1 UT for several years, I encourage you to use the highly convenient AAVSO calendar, published each year, with Julian days listed for each day.

Incidentally, the Julian day system has nothing to do with the Julian calendar. Apparently Scaliger named his system to honor his father, Julius Caesar Scaliger.

Say you have an observation of R Leonis that you made on March 1, 1967 and another observation that you made on February 24, 1981. How many days after the first observation was the second? Using months and years would make this a tiresome question to answer. We know, however, that the Julian day of the second observation was 2444660, and that the day of the first was 2439551. By simple subtraction we conclude easily that the second observation was 5109 days after the first.

Julian days are measured from noon to noon, UT. Universal time is the time used in Greenwich, England, and to convert your standard time to it you need to subtract or add a number of hours. Don't forget that the number changes if you switch to daylight time.

Once we have started using the Julian day system, why not continue by dividing each day into tenths so that each tenth occupies slightly less than an hour and a half? Use the Table 9.2 convert from Universal Time to tenths of a day. An observation made between 3:36 and 6:00 Universal time would be recorded with 0.2 being added to the Julian day, and one between 6:01 and 8:23 would have 0.3 added to the Julian day.

Table 9.1. Julian Days

Noon, January 1 UT.	Julian day
1987	2446797.0
1988	2447162.0
1989	2447528.0
1990	2447893.0
1991	2448258.0
1992	2448623.0
1993	2448989.0
1994	2449354.0
1995	2449719.0
1996	2450084.0
1997	2450450.0
1998	2450815.0
1999	2451180.0
2000	2451545.0
2001	2451911.0
2002	2452276.0
2003	2452641.0
2004	2453006.0
2005	2453372.0
2006	2453737.0
2007	2454102.0

Table 9.2. Decimals of day

Decimal of day	UT (from noon)
0.1	0:00–3:35
0.2	3:36–6:00
0.3	6:01–8:23
0.4	8:24–10:48
0.5	10:49–13:11
0.6	13:12–15:36
0.7	15:37–15:59
0.8	18:00–20:24
0.9	20:25–22:47
1.0	22:48–0:00