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Subject: Re: Local solar time

Posted by [Michael Wallace](#) on Tue, 29 Jun 2004 15:28:02 GMT

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>>> I didn't find any with a quick search. Just a word of caution if you  
>>> are new to time systems. You need to be clear what time system you  
>>> are starting in. Julian days is just a way of counting days, not a  
>>> time system. I am quite certain that one could express local solar  
>  
>  
> I know of at least two different things that are referred to as Julian  
> days. The first of these is indeed a time system; it is a single number  
> for every single day, starting at Jan. 1, 4713 B.C.E. at 12:00:00, a  
> time when three different cycles associated with three ancient calendar  
> systems were all synchronized. Nobody was using any of those three  
> calendar systems at that synchronization time, it's just an arbitrary  
> starting point. However, using that date as a starting point made it  
> simple to convert dates in any of those calendar systems into Julian  
> days, allowing those dates to be compared with each other. It's named  
> the Julian date because the Julian calendar established by Julius Caesar  
> was one of those three systems. It was designed for use by historians of  
> astronomy, to allow them to correlate observations recorded by ancient  
> peoples using those calendar systems. The fact that it starts at Noon  
> Greenwich time was a reflection of the fact that for European  
> astronomers, noon GMT was a time when they were usually making very few  
> astronomical observations, because there's usually only one or two  
> objects (the Sun and sometimes the Moon) that you can be observing at  
> that time.

Just to throw another two cents on this, there is also Modified Julian Date. In fact, I'd say that I use MJD more than JD. The conversion between the two is simple:  $MJD = JD - 2400000.5$

The differences between MJD and JD should be obvious in the formula. MJD begins at midnight rather than noon which is more in line with our current timekeeping systems. Also, the first two digits of the JD are dropped. For ~300 years after 17 November 1858, the JD is between 2400000 and 2500000.

I should say that for processing of data, JD is used since that's what all of IDL's routines use. For display, MJD tends to be what people like to see.

> The other way I've seen the term used, is as a term for any system that  
> simply counts consecutive days from a fixed starting point; the most  
> popular starting point seems to be January 1st of the current year.  
> However, as a pendant I'm pretty sure that this is a mis-use of the

> term, or at least a confusingly over-generalized extension of it.

It is a misuse of the term, but I have seen many cases where the term is misused and abused. A more appropriate phrase would be something like "days past the such-and-such epoch," but I guess "Julian Date" has a better (although incorrect) ring to it. ;-)

-Mike

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