Subject: Re: Local solar time
Posted by James Kuyper on Tue, 29 Jun 2004 11:51:00 GMT
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Craig Markwardt wrote:

>> "Haje Korth" <haje.korth@jhuapl.edu> writes:
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>
>>>>Check the ESRG IDL library. Maybe zensun.pro does what you want.
>
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>>
>> I don't think this is the right thing, but it's close. Local solar
>> time would be the hour angle (=longitude) of the sun, not the zenith
>> angle.
>>
>>
>
>>>>"David Oesch" <oesch@giub.nospam.unibe.ch> wrote in message
>>>>news:40dfde52$1@news.unibe.ch...
>>>>
>>
>>>>>>Hi folks...
>>>>>>
>>>>>>Has anyone already written a program to convert Julian to "local
solar
>>>>>>time" ? Just before I re-invent the wheel..
>
>>
>>
>> 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.

This is the kind of Julian day that is used by many of IDL's time-oriented functions such as JULDAT, CALDAT, and TIMEGEN, and SYSTIME(/JULIAN), the "C()" format code, the LABEL_DATE function and the "LABEL_DATE" option for [XYZ]TICKFORMAT, and idlGRaxis.

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.
