Subject: Re: Converting days since 0-01-01 to Julian/Gregorian days - how can IDL recognise 0 AD?
Posted by Valeri Golev on Fri, 17 Oct 2014 10:39:08 GMT
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> I have data which has been given timestamps with the units: "days since 0-01-01 00:00", which I'm assuming means since January 1st, 0 AD. I'd like to convert this into a format I can actually use, preferably Julian days so IDL can recognise the date format when plotting.
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> From what I understand I can't use any of the default IDL programs for this task (JULDAY, GREG2JUL, etc) because of the fact that the year 0 AD doesn't exist (IDL's calendar instead goes straight from -1 to 1 to conserve leap years).
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> What should I do? I'm unsure of the timestamps used to calculate the data (all I have is the year and month) and I'll be comparing this with data from a separate dataset which does not have this problem. I don't think I can use -1 or 1 in this case as the year because the final Julian day will be wrong. Has anyone encountered this problem at all?
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> Thanks,
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>
> J. Anand

Please, check

```
IDL> print, JULDAY(1, 1, 1, 0, 0, 0)   ; Jan 01, 1 AD
      1721423.5
IDL> print, JULDAY(12, 31, -1, 0, 0, 0); Dec 31, 1 BD
      1721422.5
```

As you can see, the difference is exactly one day. It happens because there the year 0 AD in the calendar does not exists by definition!

Don't worry about .5 fraction, it comes from old astronomical tradition (Julian days start at noon).

Cheers,

Valeri