

lunar calendars [Digest urth.v028.n014]

The Urth list — 3 messages, 3 voices, 12 Aug 1999

<https://urth.darkrealm.vip/thread/urth/1740>

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John Bishop — 12 Aug 1999, 16:08

Mantis says:

Lunar calendars have thirteen months ($13 \times 28 = 364$). Period.

Not that I ever read. The islamic calendar still officially depends on a witness to the new Moon, the Judaic calendar used to (before it could rely on calculation), and the Classic world's lunar calendars did also (in particular, the calendars used to calculate possible eclipse times), though in later times astronomers calculated a sequence of short and long months that would be predictable (by reference) but never more than half a day off the real new Moon.

A fixed lunar calendar would pretty quickly cease to be aligned with the moon, which kind of loses the point, and produces the kind of "months" we have, which are unrelated to the Moon.

Thus a year would be either 12 or 13 months, depending on whether it had an extra month or not (Judaic "second Adar"), and the months would have either 28 or 29 days. Trusted witnesses would look at the sky, searching for a new Moon to start a new month, and a trusted (priestly) authority would determine when to insert an extra month depending on astronomical observations (such as the Pontifex Maximus in Rome).

During the late Classic time, there was a 19-year cycle of long and short months, long and short years which kept the Moon phase predicted by the calendar within half a day of the real Moon phase, and the seasons within half a month of the real season, so direct observation (and the consequent need for messengers to spread the news, etc.) wasn't required.

It wasn't perfect (there was a long-term drift), and there was a 57-year cycle which solved most of the drift, but it never became widely accepted. The 19-year calendar was useful because the eclipse cycle is also 19 years (due to the precession of the moon's orbit, which moves the location of the ascending and descending nodes of the moon's orbit along the ecliptic). You could put "eclipse" seasons into the 19-year cycle: they marked the points at which the Earth, Moon and Sun were aligned in such a way that an eclipse was very likely.

See Abell's astronomy text and various encyclopedias. I once long ago programed up a calendar maker which used modern data to construct the 19 and 57 year calendars, but I don't know if the Classic ones would have had the same distribution of longs and shorts.

-John Bishop

Michael Andre-Driussi — 12 Aug 1999, 14:52 · follows John Bishop

John Bishop,

Mantis says:

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Not that I ever read. The Islamic calendar still officially depends on a witness to the new Moon, the Judaic calendar used to (before it could rely on calculation), and the Classic world's lunar calendars did also (in particular, the calendars used to calculate possible eclipse times), though in later times astronomers calculated a sequence of short and long months that would be predictable (by reference) but never more than half a day off the real new Moon.

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Maybe there is trouble caused by the term "calendar"? That is, if I wrote "Lunar reckoning" rather than "Lunar calendar," would that clear up some of the problems? ("Calendar" carries such imperial trappings, such a sense of precision, or something written down, at least.) Because by the "Lunar reckoning" I'm describing, the situation can =never= cease to be aligned with the Moon; by the same token, dates are about as fluid as the watches of the day (where they have no mechanical timepieces, nor do they even assign sequential numbers to the watches). And years are numbered by the reign of the Autarch.

I am aware of the "Lunar" calendars you mention, and frankly I think they get into the trouble they do because they are trying to match the solar year (and see next paragraph). I sense that they are hybrid Lunar calendars, born from a tradition of simple Lunar reckoning and then retrofitted to approximate a solar calendar. (I also believe that the number of thirteen months to Lunar reckoning is the largest contributor to the taboo/"unlucky" nature of the number 13--shows how deep these arguments run!)

I'm also aware that those pesky fractions (29.nnn days per lunar month) will throw the counting off--after all, that was the impetus to have alternating long and short months (I've seen Chinese women calculate long and short months of their Lunar calendar by somehow counting on the knuckles of their fists--don't ask me how). Then again, what with the terraforming and all, the 1.nnn fraction may have been shaved off! (And 28 is handy because it divides evenly by seven, and . . . uh oh, next we'll be arguing on how many weeks there are to a year!)

In addition to historical examples I've also seen models for interesting modern solar calendars (aside from that of the French Republic) that will fix one problem or another. One, for example, that has thirteen months (the new one being "SOL," inserted between JUN and JUL) of exactly 28 days each ($13 \times 28 = 364$), where the 13th of every month is always a Friday, and a special off-calendar day for New Year's Day ($364 + 1 = 365$), plus a bonus off-calendar day every fourth year. Whooh!

(Kind of like the "missing time" in the Martian day of Kim Stanley Robinson's RED MARS--have a quick party, we're outside of time!)

Now then, I think the point of all this is =not= that Wolfe worked out any sort of Lunar reckoning and/or calendar. The point is (or so it seems to me) that in the Commonwealth they are crushed by history; time to them does not have the precise, mechanistic sense that it does to us--theirs is "medieval" or even more primitive, yet it suits them fine. The zinger being that they are the heirs of a starfaring culture, yet they have sunk to this level, a deeper, longer dark age, such that they do not have a calendar (also implying a loss of astronomical skills) . . . the Aztecs were basically neolithic, but they had a very elaborate calendar (to say nothing of Mesopotamia). So the Commonwealth would appear to be less developed than a neolithic level in this regard.

Plus, hinting at different calendars/time reckoning systems, etc., is a neat way to imply "otherness," to give the sense of strange-yet-valid (if not very accurate). One of the details I look for in sf.

And time proves to be even more fluid and fuzzy, as the story progresses.

=mantis=

Derek Bell — 28 Aug 1999, 21:15 · follows Michael Andre-Driussi

In message <199908122009.NAA08988 at lists1.best.com>, John Bishop writes:

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The Islamic calendar is also exclusively *lunar* based with a mean year shorter than the solar year. I once did a back-of-the-envelope calculation about when the two calendars would have the same year simultaneously - sometime after the 30th century, IIRC.

See Abell's astronomy text and various encyclopedias. I once long ago programed up a calendar maker which used modern data to construct the 19 and 57 year calendars, but I don't know if the Classic ones would have had the same distribution of longs and shorts.

I'd also suggest Calendrical Calculations by Dershowitz and Reingold - a web site with sample material is at <http://emr.cs.uiuc.edu/home/reingold/calendar-book/index.shtml>

Derek Bell