

Re: hypothetical Yangshao calendar (early China)

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My hypothetical Horus / Yangshao / Liangzhu calendar is based on a month of 30 days, a year of 12 months plus 5 and occasionally 6 days, and a cycle of 64 lunations that equal 63 continual months = 1890 days. One lunation is obtained by multiplying a month of 30 days by the famous Egyptian series of the Horus Eye:

$$1 \text{ lunation} = 30 \text{ days} \times '2 \ '4 \ '8 \ '16 \ '32 \ '64$$

$$= 29 \ '2 \ '32 \text{ days (mistake only 58 seconds)}$$

The Chinese Bi, from around 3400 till 2000 BC, are flat jade disks, diameters between 10 and 30 cm, with round perforations of a largely variable size in the center.

The Bi is considered a symbol of the sky. I came across five Bi, measured them, and found numbers that may refer to crucial numbers of my calendar, especially 30 and 64. So a Bi could actually be a symbol of the sun and moon, the month of 30 days and the cycle of 64 lunations.

FIRST BI: radius perforation / radius disk = 1/15
ring perforation ring = 14 1+1 14 or 7 1 7
diameter disk = 30 or 15; small grid 7 1 7 by 7 1 7
rotating square 7 1 by 7 1 = 8 x 8 = 64

SECOND BI: radius hole / radius disk = 1/5 or 3/15
ring perforation ring = 4 1+1 4 or 12 3+3 12
diameter disk = 10 or 30; small grid 4 2 4 by 4 2 4
four corner squares of small grid = 4 x 4 x 4 = 64

THIRD BI: radius perforation / radius disk = 1/4
ring perforation ring = 3 1+1 3
diameter 8, square 8 x 8 = 64

FOURTH BI: radius perforation / radius hole = 1/3
ring hole ring = 2 1+1 2 or 4 2+2 4 or 10 5+5 10
diameter = 6 or 12 or 30; medium grid 4 4 4 by 4 4 4
four corner squares of medium grid = 4 x 4 x 4 = 64

FIFTH BI: radius perforation / radius hole = 7/8
ring perforation ring = 8 7+7 8 or 4 7 4
diameter disk 30 or 15; small grid 4 7 4 by 4 7 4
four corner squares of small grid = 4 x 4 x 4 = 64

The idea of a square grid going along with a BI
seems justified by the early Chinese sign of heaven:
a man with a square for a head.

Next time: answering Paul's question

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Regards Franz Gnaedinger www.seshat.ch

- > *My thesis: 5,000 years ago the same lunisolar calendar*
- > *was known in Egypt, Sumer, Persia, India, and China.*
- > *A short week lasted 5 days, a long week 10 days. 3*
- > *long weeks = 30 days were a month. 12 months plus 5*
- > *and sometimes 6 days yielded a solar year of 365 and*
- > *occasionally 366 days, while 64 lunations equaled 63*
- > *months or 1890 days. The latter relation was known*
- > *as 'Horus cycle' in Egypt, since one lunation equals*
- > *30 days multiplied by the series of the Horus Eye:*
- >
- > *1 lunation = 30 days x '2 '4 '8 '16 '32 '64*
- >
- > *= 29 '2 '32 days (mistake only 58 seconds)*
- >
- > *The Museum of Far Eastern Antiquities at Stockholm in*
- > *Sweden keeps an anthropomorphic lid from Banshan in the*
- > *province of Gansu, central northern China, from around*
- > *2500 BC. It shows a round head on a cylindrical neck*
- > *that goes over into a wide collar framed by a zig-zag*
- > *line. As far as I can tell from a large reproduction in*
- > *a book of mine there are 48 angles: 24 (filled) angles*
- > *pointing outward, and 24 (empty) angles pointing inward.*
- > *If these numbers are correct, the almost spherical head*
- > *might symbolize the early Chinese moon god, while the*
- > *zig-zag line of the collar may symbolize the cycle of*
- > *64 lunations modulo 48:*
- >
- > *Begin with the central (empty) angle a-1 where the ends*
- > *of the painted collar meet. Count 64 angles in clockwise*
- > *direction, perform a full circle of 48 angles and then*
- > *advance by 16 further positions: thus you will end on*
- > *angle a-16. Begin another cycle from that position and*
- > *you will end on angle a-32. Begin a third cycle from*
- > *that angle and you will end on angle a-48 = a-1.*
- >
- > *You can go on as long as you wish, the cycles will*
- > *always end on the same angles a-16 a-32 a-1 that form*
- > *an equilateral triangle. Remarkably, also the eyes and*

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- > *mouth – holes in the round face – form an equilateral*
- > *triangle, and so do three protuberances on top of*
- > *the round head.*
- >
- > *Marie E.P. Koenig understood the Neolithic number 3 as*
- > *lunar symbol representing the phases waxing moon, full*
- > *moon, waning moon. In the case of the Banshan moon god*
- > *these phases might be represented by the left eye, the*
- > *slightly bigger mouth, and the right eye respectively.*
- >
- > *A protuberance on top of the head of the Banshan moon*
- > *god might represent a long week of ten days, all three*
- > *protuberances a month of $3 \times 10 = 30$ days.*
- >
- > *Is there a round hill or mountain at Banshan that might*
- > *have served as Moon Hill or Moon Mountain?*
- >
- >
- > *Next time: Chinese Bi, symbol of sky, sun, moon, month*
- > *of 30 days and cycle of 64 lunations (five Bi measured*
- > *and their numbers interpreted in terms of 'my' calendar)*
- > –
- > *Regards Franz Gnaedinger www.seshat.ch*
- > –
- > *PS. I apologize for a typo in my previous message.*
- > *The chinese forerunner of the Meton cycle was the Chang*
- > *cycle (Chang, not Chong).*
- >
- >
- >> *The Yangshao culture in China flourished roughly from*
- >> *5000 to 2000 BC and excelled in marvellous pottery.*
- >> *Some of these vessels are so beautifully painted that*
- >> *I dare assume a cosmological and hence calendarical*
- >> *meaning. I frequently encountered the number 12, or*
- >> *multiples of 12, and the number 16, given as 4×4*
- >> *dots in a cross-like arrangement within a circle or a*
- >> *spiral, and the same pattern repeated in four circles*
- >> *on the quasi-sphere of the urn (if my memory serves me),*
- >> *so that we have $4 \times 4 \times 4 = 64$ dots (which might well*
- >> *anticipate the 64 hexagrams of the much later I-king).*
- >>
- >> *From these patterns I infer that a hypothetical Yangshao*
- >> *calendar from the 3rd millennium BC would have divided*
- >> *the zodiac into 12 equal angles representing 30 days*
- >> *each. A month would have counted 30 days; a solar year*
- >> *12 months or 360 days, plus 5 and occasionally 6 days,*
- >> *yielding 365 and sometimes 366 days.*
- >>
- >> *This annual calendar of 12×30 days plus 5 or 6 days*
- >> *would have been combined with a continual calendar of*
- >> *30-day periods. The Yangshao astronomers might have*

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> > *observed that 64 lunations (e.g. from one to the next*
> > *full moon) correspond to 63 periods of 30 days. The*
> > *mistake is very small: less than one minute; or about*
> > *one hour in over five years. (A lunation or synodic*
> > *month lasts 29 days 12 hours 44 minutes 2.9 seconds;*
> > *modern value from 1988 AD).*
> >
> > *Duodenary patterns (12 or multiples of 12) would refer*
> > *to the solar calendar, while patterns of $4 \times 4 \times 4 =$*
> > *64 dots would refer to 64 lunations that fit into the*
> > *continual pattern of 30-day periods. A major insight*
> > *of early astronomy, I dare say, also occurring in*
> > *ancient Egypt, where it was linked, I believe, to the*
> > *famous series of the Horus Eye:*
> >
> > *1 lunation = 30 days times '2 '4 '8 '16 '32 '64*
> >
> > *= 29 '2 '32 days (mistake 58 seconds)*
> >
> > *On another urn I counted 17 dots in a circle or spiral.*
> > *Also that number may refer to observations of the moon.*
> > *Add the following numbers of days and you obtain very*
> > *good conversions of lunations into days:*
> >
> > *30 29 30 29 30 29 30 29 30 29 30 29 30 29 30 29 30*
> >
> > *The best conversion is obtained with 17 lunation that*
> > *correspond fairly well to the sum of 502 days. Also*
> > *such an observation was in principle accessible to*
> > *the early Chinese astronomers.*
> >
> > *Now we have two fine definitions of a lunation:*
> > *30 day \times 63/64, and 502/17 days, average 29 days 12*
> > *hour 43 minutes 40.6 seconds; mistake 22.3 seconds.*
> >
> > *>From here it is not far to the Chinese Chong cycle:*
> > *235 lunations equal 19 solar (tropical) years. We know*
> > *that cycle as Meton cycle, named for a Greek astronomer*
> > *who flourished in the 5th century BC. However, it had*
> > *long before been discovered and used by the Chinese.*
> >
> >
> > *Next time: moon god? anthropomorphic lid from Banshan,*
> > *province Gansu, around 2500 BC; Museum of Far Eastern*
> > *Antiquities, Stockholm, Sweden (64 modulo 48 ?)*
> > -
> > *Regards Franz Gnaedinger www.seshat.ch*