

Refers to: **Brij's Home Page** at: <http://www.brijvij.com/>

On Exception & Mean Year Re: Hopkins's Leap Week Calendar

>5:40:400 gives a mean year of 365.2425 days as Gregorian

>5:40:400:20,000 would subtract 7/20,000 from that giving 365.24215 days.

>5:40:400:20,000:200,000 would add 7/200,000 to that giving 365.242185 days as reckoned by Robert.

“My working has been on 128-year base cycle to give:  $(365+31/128) = 365.2421875$  days; and its further extension to apply for Leap Weeks on \*divide by six(6) with added Keplers' Leap Weeks – when symmetrically placed\*. This can be obtained:  $[3*(7*128)\text{-years}/477 \text{ LWks}]$  to give:

Mean Year =  $[7*(52+1/6+29/2688)] = 365.2421875$  days. I developed a  $33*27*9 = 8019$ -year 'saros' linked to 128-year cycle getting Mean Year =  $365+31/128$  days; also resolving CE 'zero year' BC/AD Era count". Please, see my distributions of Years from YEAR ZERO +/- 128-year cycle, at:

[http://www.brijvij.com/brij8019\\_In-yr.pdf](http://www.brijvij.com/brij8019_In-yr.pdf)

It is the simplicity of Calendar Reform to achieve an \*Easiest, Surest and Cheapest\* transition between Gregorian to the \*New & promising World Calendar for All Ages\*. Please also see my: Distribution for 400-year/71 Leap Weeks as shown at:

[http://www.brijvij.com/bb\\_div.6vshexade400-yr.LWks-distr..pdf](http://www.brijvij.com/bb_div.6vshexade400-yr.LWks-distr..pdf)

If I had any say in Reform of Gregorian Calendar, I would OPT for \*exceptions of Leap Day ONCE every 128-years\* as at: [http://www.brijvij.com/bbv\\_Gen8Cal.doc](http://www.brijvij.com/bbv_Gen8Cal.doc) OR alternately resort to Leap Weeks using  $3*896\text{-years}/477$  Leap Weeks that give Mean Year =  $365.2421875$  days”.

"My proposal in brief revolves around DUAL use of (24hx100mx100 second) & (24hx100mdx100sd) clocks; and the 364-day World Calendar (with or without Leap Weeks), using LWks or Leap days - to be used as World Peace Weeks/Days - when inserted; retaining the 'general' distribution of days during the years as per Keplers' Planetary Laws & 7-day week cycle. My approach to Reform of the Calendar is to 'satisfy the impacts feared towards COST that may need be incurred' if and when the change need be brought about:

1. No change to 7-day Sabbath cycle;
2. No change to 12/24-hour clock face;
3. No/or minimal change to Gregorian calendar format;
4. No major change to mathematical/trigonometric functions; and
5. To find the most easily adaptable scheme with least possible changes – to get a **surest, easiest and cheapest** transitional proposal, at '*little or NO cost to tax-payer*'.

[http://www.brijvij.com/bb\\_CalRhyme.jpg](http://www.brijvij.com/bb_CalRhyme.jpg)

<http://www.brijvij.com/synopsis-n-364d-options.doc>

<http://homepage.ntlworld.com/calendar.creations/BRIJ'S~2.PPT>

My contribution: The Metric Second (1973 April) touched this aspect, to the extent that I suggested a minor correction 'required for the present Length unit - Metre'. If time unit, metric second (sm), and length unit - metre (m) were linked - as I did during 1971-1973; and later modified during 1990's to <<http://www.brijvij.com/clockface-n-earth.doc>>, there would NEVER have been the dilemma that SI-metric Units confront today. It is therefore time that SI-units be granted a fresh look in totality, rather than 'find evasive routes' to divert/delay the ongoing process to Metrication/Decimalisation of Time of the Hour in relation to arc-length on Earth surface - via 36% of SI-atomic second & '1/10<sup>5</sup>th of arc-angle Pi/180 (1-degree).

**The Gregorian Calendar** features 12 months of variable length, between 28 and 31 days each. The month lengths are 31, 28, 31, 30, 31, 30, 31, 31, 30, 31, 30, 31 (and are named ...as we know), except that an extra day is added at the end of the second month (February) every four years, except in century years (1900, 2000, 2100, etc.) OTHER than in years whose number is divisible by 400 (1600, 2000...).

My Gregorian Rhyme Calendar <[http://www.brijvij.com/bb\\_Modified-Cal-fmt.pdf](http://www.brijvij.com/bb_Modified-Cal-fmt.pdf)> features 12 months 'generally' retaining Keplers' Planetary Laws, with days between 29 and 31. The month lengths are: 31, 29, 31, 30, 31, 30, 30, 31, 30, 31, 30, 30 (PLUS World Peace Day) as:

Jan:31; Feb:29; Mar:31; Apr:30; May:31; Jun:30

Jul:30; Aug:31; Sep:30; Oct:31; Nov:30; Dec:30

(365th day of Year is World Peace Day, placed after December 30<sup>th</sup> and before January 1<sup>st</sup> of NEXT year; Leap Day 'once every 4<sup>th</sup> year/skipped during 128<sup>th</sup> years', is however, placed between June 30 & July 01); unless Leap Weeks plan is considered, to account for 1.242189669781 days for the calendar format.

Other than my 'Div.6 scheme' for  $3*(7*128)=2688$ -years/477 LWks that result in a Mean Year of  $7*(52+1/6 +29/2688 =365.2421875$  days; my later working (during 2002) demonstrates 834-years/148 LWks to give, Mean Year value of  $7*(52+1/6+9/834) =365.242206235012$  days. This definitely is an equally better & closer approximation to actual Vernal Equinox tropical year. A general comparison with other 'discussed calendars' can be seen at:

[http://www.brijvij.com/bbv\\_cal-reform-anewWrld-calendar.pdf](http://www.brijvij.com/bbv_cal-reform-anewWrld-calendar.pdf)

The main objection to calendar reform, as Peter Meyer and Lance Latham point in their (mail 20070129) clearly, is the cost of software conversion, and how the advantages of a new calendar would not be sufficient to justify this cost.

“Those businesses and other organizations (universities?), who are currently using the ISO 8601 Calendar perceive a benefit. And they don't do it all with pencil and paper, so they have presumably paid programmers to write the necessary software. This could be seen as incremental conversion to a new calendar, since it is not being done all within a year or two. (I am not, however, suggesting that the ISO 8601 Week Calendar is best candidate in the quest for a better calendar)”.

May I recall my mail of (Monday, January 22, 2007 12:36 PM) on Descending Order Date Writing & Event Expression? In my approach for A World Calendar for All Ages, I have retained all (or most) parameters already in use and known to the common man. Cost factor is natural to increase by:

- (a) delays in adoption;
- (b) software's needing more changes; and
- (c) the cost of teaching aids, down to common man.

Lance may have his reasons to 'convey' the sense that \*calendar reform\* is a dead issue since 1930's. If this were so, was there a need to examine the Proposal of World Calendar Association of Elizabeth Achilles that India proposed at United Nations, but United Nations was forced to 'adjourn' the calendar question, UNRESOLVED, by an American VETO - in the hope - there shall be a better proposal in due time'. YES, the impossible situation, to me appear getting resolved; and, we HIS (God's) CHILDREN expect HIM to turn his face away.

QUESTION: Is there a father (among we humns), who may not want his children to outshine him? HE may not want his children to go astray and/or drain his hard earned reputation/resources – BUT a PROUD parent would watch him grow, to see fruits of his achievement.

### **Cardinal Points:**

Since my calendar format does NOT differ much from the Gregorian calendar 2007; \*except that July 31st is shifted to February 29th\* - the differential shall 'generally fall on the SAME day and may be +/- ONE day' as at: <http://scienceworld.wolfram.com/astronomy/TropicalYear.html>

*Vernal Equinox:* [Wednesday, March 20] Wednesday, 2007 March 21/00h: 08m (MJD 2,454,181.0056)

*Northern (Summer)Solstice:*[Thursday, June 20] Thursday, 2007 June 21/18h: 11m (MJD 2,454,273.7576)

*Autumn Equinox:* [Sun. Sept.09] Sunday, 2007 September 09/09h: 51m (MJD 2,454,353.4104)

*Southern (Winter) Solstice:* [Sat. December 22] Sat., 2007 December 22/06h: 09m (MJD 2,454,457.2563).

History of calendar reform has undergone a 400-year period; and without reaching a format for an 'Easiest, Surest and Cheapest' possibility of A World Calendar - like shifting July 31 to February 29.

*Do obstacles deter research? What attributes?*

All along EXPERTS have talked to overcome 'blank days'. My divide by six(6) plan using  $[3*(7*128)]$ -years/ $(3*159)=477$  LWks to get: Mean Year =  $7*(52+1/6+29/2688)=365.2421875$  days.

perpetuality of calendar format can be achieved by keeping 'World Peace Day - 365th day) and Leap Sunday - once every four years (except during div.128th years)' OUTSIDE of the calendar format BUT within the year of occurrence - to get: Mean Year  $= (365+31/128) = 365.2421875$  days. In the format for Year 2007 Reformed format at my Home Page: <http://www.brijvij.com/> the year start is on MONDAY (01) thro Sunday (00/07) in 52 weeks(364-days) of 4 equal quarters (91-days or 13-weeks) BUT keeping 365th (World Peace Day) & 366th (Leap Sunday) outside of calendar format. There is NO CHANGE to month names for easy & cheapest adaption/adoption by shifting only ONE day July 31st th February 29th; in rhym with known number of days during each month of Gregorian calendar, causing minimal changes to the Gregorian calendar. The name & number of days during 12-months are: Jan:31; Feb:29; Mar:31; Apr:30; May:31; Jun:30 and Leap Sunday (once every four years);

Jul:30; Aug:31; Sep:30; Oct:31; Nov:30; Dec:30 and (365th day of Year is World Day).

I show several IMPORTANT cycles at: [http://www.brijvij.com/brij8019\\_In-yr.pdf](http://www.brijvij.com/brij8019_In-yr.pdf)

896-yr/11082 lunation & 2688-yr/33246 lunation with Mean Year  $= 365.24328704511156$  days; and 8019-year/99181 lunation with Mean Year  $= 365.24261129817$  days.

A pure luni-solar 1021-years/12628 lunation cycle has 372912.275652846401 days (not a multiple of 7-day week cycle) gives Mean Year  $= 372912/1021 = 365.241919686582$  days – pretty close to my 128-year solar cycle (Mean Year  $= (365+31/128)$  days. 1021-year make a good choice [ $26*19+33+26*19$ ]. Added advantage of my [ $33*27*9 = 8019$ -year cycle [ $77*(19+33)+11+77*(33+19)$ ] year distribution; is an improvement over  $28*19*15 = 7980$ -year Julian cycle].

Planning Exceptions (Re: Hopkins's Leap Week Calendar), my response dated 2007 Feb. 23 is placed below:

Karl, Robert sirs:

If one did need to correct the 5:40:400 cycle one could do it by postponing the 400-year exceptions to exceptions by 40 years. This would achieve the same mean year of 365.242185 days if done 9 times in 40,000 years.

If I had any say in Reform of Gregorian Calendar, I would OPT for \*exceptions of Leap Day ONCE every 128-years\* as at: [http://www.brijvij.com/bbv\\_Gen8Cal.doc](http://www.brijvij.com/bbv_Gen8Cal.doc) OR alternately resort to Leap Weeks using  $3*896$ -years/477 Leap Weeks that give Mean Year  $= 365.2421875$  days.

My working has been on 128-year base cycle to give:  $(365+31/128) = 365.2421875$  days; and its further extension to apply for Leap Weeks on \*divide by six(6) with added Keplers' Leap Weeks - symmetrically placed\*. This can be obtained: [ $3*(7*128)$ -years/477 LWks] to give:

Mean Year  $= [7*(52+1/6+29/2688)] = 365.2421875$  days. It is the simplicity of Calendar Reform to achieve an \*Easiest, Surest and Cheapest\* transition between Gregorian to the \*New & promising World Calendar for All Ages\*. Please see: [http://www.brijvij.com/brij8019\\_In-yr.pdf](http://www.brijvij.com/brij8019_In-yr.pdf)

Distribution for 400-year/71 Leap Weeks is shown at:

[http://www.brijvij.com/bb\\_div.6vshexade400-yr.LWks-distr..pdf](http://www.brijvij.com/bb_div.6vshexade400-yr.LWks-distr..pdf)

### **LUNAR Compromise:**

Lunar Year  $= 12*29.53058881 = 354.36706572$  days; Solar Calendar Year  $= 365.242189669781$  days.

This difference  $= 365.242189669781 - 354.36706572 = 10.875123949781$  days. In 19-years, these accumulate to 206.627355045839 days (6 lunation 29d 10h.651732460136). Thus, 7-lunation are added ONCE around every (867 days i.e.2y 137d) or during 30<sup>th</sup>, 59<sup>th</sup>, 89<sup>th</sup>, 118<sup>th</sup>, 147<sup>th</sup>, 177<sup>th</sup> and 206<sup>th</sup> lunation.

Thus, during 29<sup>th</sup>, 57<sup>th</sup>, 86<sup>th</sup>, 114<sup>th</sup>, 143<sup>rd</sup>, 171<sup>st</sup>, 200<sup>th</sup> months, a lunation can be inserted.

My luniSolar calculations revolve around  $5*47=235$  lunation/19-year solar cycle in relation to \*ratio Tithi of 138W/965\* - in close relation with ratio 961/960 (inter-conversion between atomic days & ratio tithi). THIS value for a 'tithi or phase' is in close approximation with 19-years/6932.5 and/or 235-lunation/ 6932.5; and the 2-hour excess 'adjusted' by dropping ONE day in 219-years, as also discussed during my postings to Calndr-L.

This may be interesting to observe that Dark Moon (Amavasya on 2007 February 17<sup>th</sup> — MJD 2454150) falls in line with Hindu Kali Era, 5108 years ago  $[(133*19+ 18)+18+(133*19+18)]$ , when the new 19-year cycle starts; alongwith introducing the ‘Easiest, Surest & Cheapest Reform of the Gregorian Calendar’, as suggested by me. The table below, may deviate by ‘one or two’ days from actual dates of Dark Moons since NOT attributed to: [http://www.brijvij.com/bbv\\_cal-reform-anewWrl-calendar.pdf](http://www.brijvij.com/bbv_cal-reform-anewWrl-calendar.pdf)

Kindly review this BRIEF exposition for Reform of the Gregorian Calendar, in the light of: [http://www.brijvij.com/bb-ESR\\_div6-Cal.Reform.pdf](http://www.brijvij.com/bb-ESR_div6-Cal.Reform.pdf)

**AMAVASYA (DARK MOONS) — Gregorian Nineteen Year Cycle (2007 thro 2025)**

YEAR	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Jan	19	08	26	15	04	23	11	01/30	20	10	28	17	06	24	13	02	21	11	29
Feb	17	07	25	14	03	21	10	X	18	08	26	15	04	23	11	01	20	09	28
Mar	19	07	26	15	04	22	11	01/30	20	09	28	17	06	24	13	02	21	10	29
Apr	17	06	25	14	03	21	10	29	18	07	26	16	05	23	12	01/30	20	08	27
May	16	05	24	14	03	20	10	28	18	06	25	15	04	22	11	30	19	08	27
Jun	16	03	22	12	01	19	08	27	16	05	24	13	03	21	10	29	18	06	25
July	14	03	22	11	01/30	19	08	26	16	04	23	13	02	20	10	28	17	05	24
Aug	12	01/30	20	10	29	17	06	25	14	02	21	11	01/30	19	08	27	16	04	23
Sep	11	29	18	08	27	16	05	24	13	01	20	09	28	17	07	25	15	03	21
Oct	11	28	18	07	26	15	05	23	13	01/30	19	09	28	16	06	25	14	02	21
Nov	09	27	16	06	25	13	03	22	11	29	18	07	26	15	04	23	13	01	20
Dec	09	27	16	05	24	13	03	22	11	29	18	07	26	14	04	23	12	01/30	20

Amavasya (Dark Moon) next is on Sunday, 2026 January 18 (CJD 2461059.8276).

BRIJ BHUSHAN VIJ, Author

20070229

Reference: <http://www.skepticsannotatedbible.com/science/long.html>

**Science and History in the Bible**

I don't think Chris Carrier was aware of the fact that 896 years was close to a whole number of lunations when he invented the Bonavian Civil Calendar or that he would care about this.

**IMP:** The third, *Bonavian Leap-Month Calendar*, was not invented until 1993.

**Bonavian Cycle** (from Karl): Hotmail does not recognize E-mail ID of Chris Carrier.

**-- New Moons for 2004 A.D. --**

Wed	Jan 21 21:05:09 UTC 2004	Fri	Feb 20 09:18:30 UTC 2004
Sat	Mar 20 22:42:56 UTC 2004	Mon	Apr 19 14:22:09 UTC+0100 2004
Wed	May 19 05:51:25 UTC+0100 2004	Thu	Jun 17 21:25:43 UTC+0100 2004
Sat	Jul 17 12:22:57 UTC+0100 2004	Mon	Aug 16 02:22:45 UTC+0100 2004
Tue	Sep 14 15:26:56 UTC+0100 2004	Thu	Oct 14 03:45:39 UTC+0100 2004
Fri	Nov 12 14:25:05 UTC 2004	Sun	Dec 12 01:27:45 UTC 2004

**-- New Moons for 2900 A.D. --**

Fri	Jan 22 07:21:02 UTC 2900	Sat	Feb 20 18:24:39 UTC 2900
Mon	Mar 22 04:41:06 UTC 2900	Tue	Apr 20 15:15:18 UTC+0100 2900

Thu May 20 00:26:58 UTC+0100 2900  
Sat Jul 17 21:00:10 UTC+0100 2900  
Wed Sep 15 01:23:48 UTC+0100 2900  
Sat Nov 13 10:30:09 UTC 2900

Fri Jun 18 10:01:53 UTC+0100 2900  
Mon Aug 16 10:06:21 UTC+0100 2900  
Thu Oct 14 18:12:35 UTC+0100 2900  
Mon Dec 13 03:17:10 UTC 2900

From : Palmen, KEV (Karl) <K.E.V.Palmen@RL.AC.UK>  
Reply-To : East Carolina University Calendar discussion List <CALNDR-L@LISTSERV.ECU.EDU>  
Sent : Friday, July 01, 2005 11:46:30 AM  
To : CALNDR-L@LISTSERV.ECU.EDU  
Subject : Divide-by-Six Choice Re: Rules Re:...FW:...



Dear Brij and Calendar People

-----Original Message-----

From: East Carolina University Calendar discussion List  
[mailto:CALNDR-L@ECUMAIL7.ECU.EDU] On Behalf Of Brij Bhushan Vij  
Sent: 29 June 2005 15:15  
To: CALNDR-L@ECUMAIL7.ECU.EDU  
Subject: Re: Choice Re: Rules Re:...FW: Brij's New Saros RE:  
Accurate  
Divide-by-Six Rules

Karl, sir:

>.....This is the cycle followed by the 128-year epact  
suggested by me on  
>November 24  
>last year and the 64-year epact suggested by Brij three  
days later.

Instead of finalising the issue, we are debating  
'credibility aspect'.

In my humble way I have attempted to give all that Karl has  
been 'pressing  
and exploring my mind'. I am NOT lamenting BUT providing  
solutions that I  
see (with or without acceptable jitters).

>> 90,96,90,96,90,96,90,96,90 (834 years)  
>90,96,90,96,90,96,90,96,90,96,90 (1020 years)  
>90,96,90,96,90,96,90,96,90 (834 years)

KARL SAYS: This has MINIMUM JITTER.

Other than THIS above distribution that we agree, some other  
possibilities  
include:

(a)  $(2*648)+96+(2*648) = 2688$ -years - that can be placed:  
(90,96,90,96,90,96,90)+(90,96,90,96,90,96,90)+96+  
(90,96,90,96,90,96,90)+(90,96,90,96,90,96,90)  
(b)  $(3*90)+(4*96)+(5*90)+(5*96)+(5*90)+(4*96)+(3*90)$

$= (16 \cdot 90) + (13 \cdot 96)$   
 $= 2688$ -years

(a) has a little more jitter. All intervals of 96 are still followed by an interval of 90. Therefore there are THREE additional leap weeks that are 90 years before and after the nearest additional leap weeks. I called these the special additional leap weeks. In the original (minimum jitter suggestion), their intervals are (834,1020,834) and are as evenly placed as possible.

In (a) those special leap weeks are placed (648,1392,648), which are not so evenly placed.

Note that the 96 in the middle joins the two neighbouring 648s together forming a  $1392 = 648 + 96 + 648$ , which is simply 15 intervals of 90,96,90,96... ,90,96,90.

For (b)

$(3 \cdot 90) + (4 \cdot 96) + (5 \cdot 90) + (5 \cdot 96) + (5 \cdot 90) + (4 \cdot 96) + (3 \cdot 90)$   
has more jitter because it has up to 5 consecutive intervals of 96 and  $(16 \cdot 90) + (13 \cdot 96)$  is much worse.

BRIJ CONTINUES:

Year 2049 is 'Naturally between TWO 'normal divide by six LWks' is the reason I have repeatedly mentioned of this year at start. If one were to start at Year ZERO, naturally it could be shifted to Year 0003 or (-0003) and indicated by other KALWks by the SCHEME standardised for \*acceptable symmetry\*. My reason for choosing Y2049 partly is to tie 'divide by four/SKIP at 128-yr rule' as:  
 $[(2000-80)+128]$  i.e. the year after 2048 or Y 2049th.

KARL SAYS:

2049 is a symmetry year for my second suggestion, that has intervals of 96 and 84 years between the additional leap weeks depending on whether the interval has a year divisible by 128.

If my first suggestion were delayed 2046 years or 2046-1344 = 702 years it would

also have 2049 as a symmetry year.

BRIJ CONTINUES:

ALL ALONG, I was given to understand that \*an accurate distribution of Divide by six(6) was NOT conducive or even possible\* to which I advocated THERE had to be a possibility, which I attempted and showed. I am not against Karl's TWISTING my mind, to have my best. I maintain, the merger for:  
(a) Divide the Year by four/ SKIP at divide the Year by 128; and  
(b) Use the best option (from jitter & symmetry angle) out of the above  
THREE options:  
(i) [834+1020+834]; (ii)[2\*648+96+2\*648]; OR  
(iii)[16\*90+13\*96] - all equal 2688-years.  
I do not mean to show disrespect to anyone's \*capability BUT would certainly want my credibility or competence be protected\*. I accepted Karl's suggestion that RULES framing could be left to Calendar people, I have even left the software development to Karl & CC.

KARL SAYS:

(i) has minimum jitter  
(ii) has a little more jitter = [648+1392+648].  
(iii) has lots of jitter and so should not be considered.

Brij could consider [1020+648+1020], which has little more jitter than minimum (i) and less jitter than (ii). It has the decimal-friendly period of 1020 years occurring more than in [834+1020+834].

Brij could also consider additional leap weeks at

1905 2001 2097 2193  
2277 2373 2469  
2553 2649 2745 2841  
2925 3021 3117 3213  
3297 3393 3489  
3573 3669 3765 3861  
3945 4041 4137 4233  
4317 4413 4509  
4593 4689 4785 4881  
and so on every 2688 years..

Here EVERY additional leap week year begins on the same date in the 128-year cycle calendar. Every interval between successive additional leap weeks is either a 96-year interval containing a year divisible by 128 (within row) or an 84-year interval not containing a year divisible by 128 (between rows).

This cycle is symmetrical about year 2049, which is next to 2048.

The start of this cycle may be shifted a multiple of 384 years (which is  $3 \times 128$  years). So we can choose year  $129 + 384 \times N$  for any whole number N for the symmetry. N=5 gives 2049 as we have here.

If N=3 then the cycle is symmetrical about 1281 (next to 1280), which is divisible by 7. It is then also symmetrical about 2625, 3969 and so on every 1344 years, which are all are divisible by 7. The additional leap weeks are 2049-1281=768 years earlier than those listed above (for N=5) so the first row begins with 1905-768=1137 and the 3rd row is 1785 1881 1977 2073.

Karl

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Brij Bhushan Vij <[metricvij@hotmail.com](mailto:metricvij@hotmail.com)>  
(Wednesday - Kali5106-W11-03)/D-181 (2005 June 29H1973(decimal) IST

>From: "Palmen, KEV (Karl)" <[K.E.V.Palmen@RL.AC.UK](mailto:K.E.V.Palmen@RL.AC.UK)>  
>Reply-To: East Carolina University Calendar discussion List  
><[CALNDR-L@ECUMAIL7.ECU.EDU](mailto:CALNDR-L@ECUMAIL7.ECU.EDU)>  
>To: [CALNDR-L@ECUMAIL7.ECU.EDU](mailto:CALNDR-L@ECUMAIL7.ECU.EDU)  
>Subject: Re: Choice Re: Rules Re:...FW: Brij's New Saros RE: Accurate  
>Divide-by-Six Rules  
>Date: Wed, 29 Jun 2005 13:56:35 +0100  
>  
>Dear Brij and Calendar People  
>  
>-----Original Message-----

>From: East Carolina University Calendar discussion List  
>[mailto:CALNDR-L@ECUMAIL7.ECU.EDU]On Behalf Of Brij Bhushan Vij  
>Sent: 28 June 2005 23:11  
>To: CALNDR-L@ECUMAIL7.ECU.EDU  
>Subject: Re: Choice Re: Rules Re:...FW: Brij's New Saros  
RE: Accurate  
>Divide-by-Six Rules  
>  
>  
>Karl, sir:  
>What are the problems (?) in achieving:  
> >7\*[(52+1/6)+29/2688] =365.2421875 days, using 3\*896-  
yrs/159 LWks. This  
> >being  
> >closer to True Mean Year value of 365.242189669781 days.  
AND go smoothly  
> >with with \*Divide by four (4) Leap Day Rule/Skip at  
128th-year, as  
> >modification to current Grgorian Leap Day accounting of  
4/100/400 plan\*.  
>We have examined placing 29 Keplers' (Additional) Leap  
Weeks in 2688-years.  
>If 834-years & 1020-years distribution is recommended, I  
prefer  
>[834+1020+834]=2688-years.  
>  
>KARL SAYS:  
>The 834-year cycle is much simpler and about the same  
accuracy to the mean  
>tropical year. However the 2688-year cycle stays in sync  
with the 128-year  
>cycle (a contains 21 of them). Also the 2688-year cycle has  
had epacts  
>defined for it that repeat over TEN of these cycles.  
>  
>About the cycle of [834+1020+834]=2688-years:  
>The minimum jitter distribution of the intervals between  
additional leap  
>weeks for divide-by-six is as in suggestion (5) in my note  
of Tuesday 31  
>May.  
>  
>(5) Additional leap weeks of intervals:  
>  
> 90,96,90,96,90,96,90,96,90 (834 years)  
>90,96,90,96,90,96,90,96,90,96,90 (1020 years)  
>90,96,90,96,90,96,90,96,90 (834 years)  
>  
>will do. Starting the first interval after year 0003 we  
get:  
> 0093 0189 0279 0375 0465 0561 0651 0747 0837

>0927 1023 1113 1209 1299 1395 1485 1581 1671 1767 1857  
 >1947 2043 2133 2229 2319 2415 2505 2601 2691  
 >  
 > 2781 2877 2967 3063 and so on every 2688 years  
 >  
 >It is symmetrical about years 0003, 1347 and 2691.  
 >  
 >This cycle cannot be made symmetrical about year 0, because  
 the year of  
 >symmetry must have a remainder of 3 when divided by six.  
 This applies to  
 >ANY 2688-year cycle with 29 additional leap weeks.  
 >  
 >  
 >BRIJ THEN SAID:  
 >Choosing between 'Accurate Leap Weeks distribution' and  
 Leap Day adjustment  
 >every 4th-year unless also divisible by 128th years (to  
 SKIP the Leap Day),  
 >my suggestion to modify Gregorian Leap accounting from  
 4/100/400-years to  
 >\*divide by 4/128-years\* is ideal and STANDS.  
 >  
 >KARL SAYS:  
 >I suggested on Friday 3 June a divide-by-six rule that fits  
 in with this  
 >rule and makes EVERY additional leap week year begin on the  
 same day in the  
 >128-year cycle leap day calendar. It has intervals of 84  
 and 96 years  
 >between the additional leap years adding a little to the  
 jitter, but this  
 >would be worthwhile to simplify the relationship with the  
 128-year cycle  
 >calendar.  
 >  
 >This can be done by ensuring that every 96-year interval  
 has a year  
 >divisible by 128 (a dropped leap year) and no 84-year  
 interval has a year  
 >divisible by 128.  
 >  
 >The following additional leap week years do this.  
 >I also show the dropped leap years in square brackets  
 >  
 >1905 [1920] 2001 [2048] 2097 [2176] 2193  
 >2277 [2304] 2373 [2432] 2469  
 >2553 [2560] 2649 [2688] 2745 [2816] 2841  
 >2925 [2944] 3021 [3072] 3117 [3200] 3213  
 >3297 [3328] 3393 [3456] 3489  
 >3573 [3584] 3669 [3712] 3765 [3840] 3861

>3945 [3968] 4041 [4096] 4137 [4224] 4233  
>4317 [4352] 4413 [4480] 4509  
>4593 [4608] 4689 [4736] 4785 [4864] 4881  
>and so on every 2688 years.  
>  
>Eight consecutive rows cover 2688 years.  
>  
>The cycle is symmetrical about years 2049 and 3393.  
>2049 is just after the dropped leap year of 2048.  
>3933 is an additional leap week year and is just one year  
after the year  
>halfway between the dropped leap years of 3328 and 3556.  
>  
>If one were to make the divide-by-six calendar year 2001  
start on Sunday 31  
>December 2000, then EVERY additional leap week year would  
start on Sunday  
>December 31 in the 128-year cycle calendar.  
>  
>One can reschedule the cycle so that the first additional  
leap week year as  
>shown is one of 369, 753, 1137, 1521, 1905, 2289, 2673 or  
any year a  
>multiple of 2688 years before or after one of these.  
>  
>  
>Finally I remember finding that that TEN 2688-year cycles  
(of 9817710 days)  
>is close to 332459 lunar months. The mean lunar month is  
> $9817710/332459 = 29.5305887$  days  
>which is very accurate by present values, but a lot of  
accuracy will be  
>lost of the 26,880 years because of change in the mean  
synodic month over  
>that time. Also the mean tropical year would change a lot  
over that time.  
>  
>This is the cycle followed by the 128-year epact suggested  
by me on  
>November 24 last year and the 64-year epact suggested by  
Brij three days  
>later.  
>128-year epacts have a saltus lunae correction  
>in year Y such that  $Y \bmod 128$  is positive and divisible by  
19 or  
>Y is divisible by 896.  
>64-year epacts have a saltus lunae correction  
>in year Y such that  $Y \bmod 64$  is positive and divisible by  
19 or  
>Y is divisible by 896.  
>The 128-year epacts have less jitter than the 64-year

epacts when used with  
>the 128-year cycle calendar.  
>  
>The 26880-year cycle is shown in the last row of  
><http://www.the-light.com/cal/Lunisolar7.html>  
>columns explained in  
>[http://www.the-light.com/cal/kp\\_Lunisolar\\_xls.html](http://www.the-light.com/cal/kp_Lunisolar_xls.html)  
>It is also shown in  
><http://www.the-light.com/cal/Lunisolar4.html>  
>as 210 128-year cycles.  
>  
>  
>Karl  
>  
>07(09(23

