

(Refers to: http://11082lunationcalendars.wikia.com/wiki/Modified_Gregorian_Calendar) (Modified 2010 0404 Easter Sunday)

Purpose of THIS FORMAT of MODIFIED GREGORIAN CALENDAR is intended to overcome *ALL or most* discrepancies noticed in currently used calendar – corrected by Pope Gregory XIII, and refers to **Brij Bhushan Vij's** Home Page: <http://brijvij.com/> for use as an "Alternate Calendar for World Use". This can be introduced on the night of 2012, December 21/22 on omitting TWO calendar days (i.e. Saturday & Sunday) as MJD 56283 correcting the error accumulated since the correction of Papal Bull of 1582 October 05-14.

This links with Era start at Year Zero '0000' AD/BCE as $15 \times 128 = Y1920$ i.e. $[Y2000 - 80 \pm 128] / 128$, when $Y1920 + 0093 = Y2013$, make its First Kepler Leap Week Year, using divide six(6) plan, since NEVER USED by man IN HISTORY: http://www.brijvij.com/bb_896-yrs-159lwk.pdf & http://www.brijvij.com/bb_896rev-distr.claim.pdf.

AUTHOR

Modified Gregorian (2013 – Starting Monday) Calendar ©1971-2010

January 2010 – W00 thro W04							February 2010 – W04 thro W08							March 2010 – W08 thro W12							REMARKS
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	
1	2	3	4	5	6	7	*	*	*	1	2	3	4	*	*	*	*	1	2	3	Two days are kept out of the
8	9	10	11	12	13	14	5	6	7	8	9	10	11	4	5	6	7	8	9	10	Calendar format, as Leap Sunday
15	16	17	18	19	20	21	12	13	14	15	16	17	18	11	12	13	14	15	16	17	of Year XXXX; and World Peace
22	23	24	25	26	27	28	19	20	21	22	23	24	25	18	19	20	21	22	23	24	Day of Year XXXX, when used as
29	30	31	*	*	*	*	26	27	28	29	*	*	*	25	26	27	28	29	30	31	Leap Days on 'Divide4/skip 128 th – yrs
April 2010 – W13 thro W17							May 2010 – W17 thro W21							June 2010 – W21 thro W25							
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	
1	2	3	4	5	6	7	*	*	1	2	3	4	5	*	*	*	*	*	1	2	on changing current Leap Day Rule.
8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9	THIS gives Mean Year
15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16	=(365+31/128) days
22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23	=7*(52+159/896) days
29	30	*	*	*	*	*	27	28	29	30	31	*	*	24	25	26	27	28	29	30	=365.2421875 days.
July 2010 – W26 thro W30							August 2010 – W30 thro W34							September 2010 – W34 thro W38							
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	
1	2	3	4	5	6	7	*	*	1	2	3	4	5	*	*	*	*	*	1	2	Same MeanYear: Div.7 & Div.8 PLANS
8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9	Leap Sunday – June 31 st using
15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16	(div.4/Skip 128 th Rule)
22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23	FEATURES:
29	30	*	*	*	*	*	27	28	29	30	31	*	*	24	25	26	27	28	29	30	* Year in 4 Quarters/91days/13Wk
October 2010 – W39 thro W43							November 2010 – W43 thro W47							December 2010 – W47 thro W51							
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	
1	2	3	4	5	6	7	*	*	*	1	2	3	4	*	*	*	*	*	1	2	* Year has 13 th NEVER A FRIDAY
8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9	* ALL YEARS HAVE FEB.29 th in
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16	EVERY YEAR
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23	*PERPETUAL, months/Days DO
29	30	31	*	*	*	*	26	27	28	29	30	*	*	24	25	26	27	28	29	30	NOT CHANGE, with YEARS

JAN:001st; FEB:032; MAR:061; APR:092; MAY:122; JUN:153; JUL:183; AUG:213; SEP:244; OCT:274; NOV:305; DEC:335 – New Year:365th

REFER: http://11082lunationcalendars.wikia.com/wiki/Modified_Gregorian_Calendar. Same Mean Year value is obtained, on using Leap Weeks with 'Divide SIX (6)Year plan for 896-years/11082 lunation [having159 Leap Weeks] Lunisolar cycle (1992) as: $7 \times (52 + 159/896)$ days which is also as: $7 \times (52 + 1/6 + 29/896)$ days. My NEW FORMAT uses the most recent data and believe that 896-year/159 Leap Week lunisolar cycle need ONLY *one extra day/tithi alignment* for solar calendar to align with lunar calendar and COMPENSATE 'one lunar month' in around ONE cycle of Precession of Equinoxes [(29*896)-yrs/321378 lunation – the last lunation getting automatically compensated i.e. 321378th lunation – after 321377 lunation]. $(3200 \times 8 + 3 \times 128) = 25984$ -years. 25984 -years = 9490453 days/321377lunation [321378 lunation = 9490482 days – 9490453 days = 28.57058018 d]. **Leap Day Rule (modified):** Leap Day Rule needs modifying from:

"div.4/skip100th/ count400th years" to improve Mean Year value from 365.2425 days to **365.2421875 days**, using **Leap Day Rule of *div.4/skip128th/count 3200th years***, when the extra ONE day is removed/adjusted.

The New Calendar Rhyme

**Thirty days hath July, September:
All the rest have thirty-one; accepting February alone:
Till years DIVIDE by six (6), give a whole week READY:**

**April, June, November and December;
Which hath but twenty-nine, to be (in) fine;
Is it not time to MODIFY or change to make it
perennial, Oh Daddy!**

And make the calendar work with Leap Week Rule!

Recalling my childhood, another method to recall number of days in the year used to be:

*close the left hand fist and COUNT from the *knuckle of little finger* 'the highs (31 days) and lows (30 days)', except the month of February – next to little finger with 28 days (in Normal Years) or 29 days (during Leap Years) according to Gregorian Leap Day Rule*. **This can be modified as:**

*close the left hand fist and COUNT from the *knuckle of little finger* 'the highs (31 days) and lows (30 days)', except the month of February – next to little finger with 29 days (ALL Years); and during Leap Years, insert the Leap Day between Sunday, June 30th and Monday, July 01st – *according to "improved" Gregorian Leap Day Rule* i.e. ADD 'leap day' during Div.4/skip128th -years* getting Mean Year = $(365+31/128) = 365.2421875$ days. **Count returns on reaching JUNE (as July)*.**

LEAP WEEKS:

Since the Modified format of calendar SHIFTS only one day i.e. July 31st to the 2nd month as February 29th, over 364-days (in four quarters of each 91-days or 13-weeks, the remaining period of 1.242189669781 day is proposed to ADD an extra Leap Week once EVERY six years (with Added Keplers' Leap Weeks) as per cycle planned i.e. 896-years/159 Leap Weeks or $3*[7*(52+1/6+29/2688)]$ to give (Mean Year: 365.2421875 days) or 834-years/148 Leap Weeks (Mean Year: $7*(52+1/6+9/834)$ days). ***This may be observed that SAME 'Mean Year Value' of 365.2421875 days is obtained when 896-year/159 LWks plan is used with *divide seven (7) [128 Normal Leap Weeks PLUS 31 Keplers' Leap Weeks]; or divide eight (8) [112 Normal Leap Weeks PLUS 47 Keplers' Leap Weeks]* schemes, when planned.***

The above 'New Calendar Rhyme', uses same nursery *Rhyme* (ignoring the translation) – *could be memorised in HINDI as:*

Tees Din July, September ke:
Baqie Sab ke Ek-Aur-Tees (31):
Chhaya (6) Saal bad, Jab Leap ka Saal Aveye:

April, June, November aur December ke;
Sirf February ke Ek-kum-Tees (29);
Us mein Poora EK SAPTAH aur Badhaveye.

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MODIFIED GREGORIAN CALENDAR (ALL YEARS) ©¹⁹⁷¹⁻²⁰¹⁰

(With or Without Leap Weeks)

Effective [(1920 – 80) ± 128] ÷ 128 YEARS

(Reference: <http://www.brijvij.com/>)

LOOK for Month AND the Date getting DAY in the ROW				DAY vs Date of MONTH						
JANUARY	APRIL	JULY	OCTOBER	MON	TUES	WED	THUR	FRI	SAT	SUN
				TUES	WED	THUR	FRI	SAT	SUN	MON
MAY		AUGUST		WED	THUR	FRI	SAT	SUN	MON	TUES
FEBRUARY		NOVEMBER		THUR	FRI	SAT	SUN	MON	TUES	WED
MARCH				FRI	SAT	SUN	MON	TUES	WED	THUR
JUNE	SEPTEMBER	DECEMBER		SAT	SUN	MON	TUES	WED	THUR	FRI
				SUN	MON	TUES	WED	THUR	FRI	SAT
<p>On correcting 2 ½ day current discrepancy since Papal Bull of 1582 Oct. 04/14, the Calendar can be slipped in as Monday, 2013 January 01. Each day has 2x12 i.e. 24-hours; further distributed as 100 decimal minutes to the HOUR and each 'hour' of 100- decimal seconds i.e. 240000 decimal seconds to the day; in relation to the axial spin of Earth (circle) of FOUR 90° quadrant and 15° in each 'HOUR ANGLE' to determine LOCAL time at any longitude on Earth East or West, calculated from current Greenwich, as replacement to Date Line – on adjusting the EXTRA ½ day discrepancy. BRIJ BHUSHAN VIJ, Author</p>				1	2	3	4	5	6	7
				8	9	10	11	12	13	14
				15	16	17	18	19	20	21
				22	23	24	25	26	27	28
				29	30	31	*	*	*	*

Salient Features:

- (1) 13th NEVER A FRIDAY.
- (2) It is Perannial i.e. Never Changing 364-day calendar of 91-days (each quarter of 13 weeks).
- (3) **World Peace Day** is inserted between December 30th (Sunday) and January 01st of next year; while **A Leap Day** is inserted after **SIXTH** month i.e. between June 30th and July 01st on changing the current Leap Day Rule to div.4/skip128th years getting Mean Year = (365 + 31/128) = 365.2421875 days. This Mean Year value is also obtained when used on "Divide SIX (6) Leap Weeks" plan with 53rd week (when World Peace Day & Leap Day) gets replaced as Leap Weeks with **Added Keplers' Leap Weeks of Year XXXX**, accommodating the extra period of 1.242189669781 day over 364-day year, as 7*(52+159/896) or 7*(52+1/6+29/2688) days.
- (4) Same format can be used for ALL years i.e. used with or without Leap Weeks

(5) Birth Days & Dates, with years DO NOT CHANGE. People born on 29th February celebrate their birth day 'EVERY YEAR' along with people born on July 31st (now shifted to February 29th).

THE COMPARATIVE CALENDARS STUDY

REFORM OF GREGORIAN CALENDAR_(BRIJVIJ)

The World Calendar (Proposed)

- >Each year begins on Sunday, ends on Saturday
- >Learn one quarter to memorise the entire calendar.
- >Usable with or without reference to a physical copy.
- >Access is available even with closed eyes.
- >Each Quarter contains 91 days.
- >Statistics gain comparability within equal quarters.
- >Simple planning for holidays, due dates, appointments

- >Holidays have same affect on business each year
- >If desired, date of Easter can be stabilised
- >Always 31 days between Thanksgiving and Christmas
- >Waste fewer tax dollars to accomplish public planning
- >Build on previously established school schedules
- >Multi-year plans; change one date to change all years
- >Each copy is functional - year after year. Ecological!
- >Longer usable life per copy will prompt better quality
- >Stable, uncomplicated, balanced, ordered, perpetual

GREGORIAN CALENDAR (current)

- >>Year begins/ends on a different day of the week
- >>Different no. of days in each month, recall RHYME
- >>Use requires finding an available physical copy
- >>Physical copy is not usable with eyes closed
- >>Quarters contain 89-92 days
- >>Reporting periods are unequal
- >>Small, continual hassles accumulate into stress

- >>Schedules juggle to accommodate continual shifting
- >>Easter floats between March 22 and April 25
- >>Similar period is 26 to 32 days
- >>Annual schedule complications tolerated/ignored
- >>Annually reinvent school schedules. EXPENSIVE!
- >>Multi-year plans: each change causes chain reaction
- >>Automatically expires at the END of every December
- >>Routine disposal numbs awareness of annual waste
- >>Unstable, confusing, uneven, irregular, archaic

>>>Discrepancies need resolving

Proposed Modified Gregorian Calendar

- >>>Year begins on Monday, ends on Sunday
- >>>Days in months follow Kepler Law, per **New RHYME**
- >>>needs physical copy BUT 'one format for ALL years'
- >>>Visualizing possible on knowing 1st day in each month
- >>>Each Quarter contain 91-days(13 weeks) – 52week year
- >>>Financial/Statistics quarters have EQUAL duration.
- >>>13 week planner make appointments, forecasts easier
- >>>Shifting July 31st to February 29th NO business affects; more so THIS format **NEVER has 13th A FRIDAY.**
- >>>EASTER can be fixed around BAISAKHI (April 13)
- >>>Can be FIXED to around 30 days
- >>>Annual schedule can be FIXED to follow
- >>>Once activated, established school norms be followed
- >>>Fixed multi-year plan on 'ignoring' World Day/Leap Day
- >>>One Format several options (with or without LWks/LD)
- >>>NO disposal as years roll. Leap Week ONCE in 6-years.
- >>>Known since 1582 & earlier EXCEPT shifting July 31 to 2nd month as February 29th; suggesting NEVER changing Birth Days/Dates. Feb.29 born individuals celebrate 'birth /Day' EVERY year along with July 31 born individuals.
- >>>Most discrepancies seem resolved – providing SUREST, SIMPLEST & CHEAPEST transition at Year 0000 BCE/AD Era.

(a) Why the Format of Gregorian calendar, need not change:

1. The calendar year stays fairly in sync with the seasonal year of Mean Year 365.2421875 days (Mean Average Astronomers' Year); or 365.242206... days (closer to seasonal year) as per 128-year or 834-year plan cycle;
2. Everyone is familiar with it; since ONLY the day of July 31st is shifted to 2nd month as February 29th (ALL YEARS), Leap Day after June 30th make it in TWO half years;
3. The rules of the calendar are already embedded in innumerable computer programs, except the shifted day from 7th to 2nd month, making FOUR quarters equal of 91-days (13 weeks);
4. The Gregorian calendar is an integral part of most cultures, and extensively used among International trading partners; along with local calendars, THIS also can be modified suitably;

5. *It maintains an uninterrupted seven-day week, which is important to most religious groups – especially if a Leap Week is inserted 'once EVERY six (6) years' along with Added Kepler Leap Week as per cycle plan;*
6. *The Gregorian calendar took nearly 400 years to be adopted by most countries that earlier used the Julian calendar. It may be difficult to promulgate changes to any another 'FORMAT' involving expenditure from tax-payers' pocket on calendar study and implementation; because all countries that use it would need to agree to make a change – perhaps United Nations (unlike the ISO experiment) decides to initiate with religious pontiffs'/groups show guidelines, like Socio-Economic and Socio-Scientific advantages.*

(b) ACCOMODATING NEEDS FOR GLOBAL USE:

1. *Although the structure of the months seem irregular, with month lengths ranging from 29 days to 31 days – most advantages for socio-economic needs are satisfied by keeping ALL four (4) quarters of 91 days (13 weeks). The extra duration of 1.242189669781 day is adjusted as 365th day (World Peace Day) at year end and 366th day (Leap Day) between June 30th and July 01st – thus making TWO half years also equal. Alternately, a Leap Week is suggested every SIX(6) years per Leap Week Rule;*
2. *The leap day rule is SIMPLE for most people already understand BUT need slightly modifying: "An extra day is added at the end of the sixth month every four years, except in years whose number is divisible by 128 except in years whose number is divisible by 3200 to get Mean Year of Gregorian calendar – also $7*(52+1/6+13/1200)$ i.e. 365.2425 days" Mean Year of value $(365+31/128) = 365.2421875$ days closer to Mean Average Astronomers' Year (average of 4 cardinal points) can be attained;*
3. *The conventional 7-day-week cycle does not fit exactly into Common Era year (there are always one or two days left over). This means that it is difficult to know which day of the week a CE date falls on – unless year format is (never changing) perennial. This 4x91-day with Leap Weeks is one such calendar;*
4. *The irregularity of the structure of the CE Calendar makes it difficult to formulate schedules of events occurring on certain days of the week which can be re-used from year to year. This possibly can be 'examined and fixed' along with lunisolar calculations/compromise;*
5. *Irregularity in number of days in CE calendar makes it very difficult to design schedules which can be used in any quarter (of three months), term (of four months) or semester (of six months). This gets resolved due to better accuracy/count of days in quarters/terms/semester following WEEKLY count/schedule;*
6. *Despite the existence of a proposed standard way of writing CE dates (the ISO 8601 date format) such dates are currently expressed mainly either as month-day-year (in the U.S.) or day-month-year (in Europe and most of the rest of the world). This creates major confusion for people in one part of the world reading dates written by and for people in another part of the world. Format of THIS calendar provide 'space to implement' ISO 8601:2004 Descending Order Dating and Representation of (decimalised) Time of Day, using a separation "H" between date and time stamp – indicating instant;*
7. *The months of the CE Calendar, although called "months", have no relation to the lunar cycles. The sequence of months and the sequence of lunation are completely unrelated, and a new moon or a full moon can occur on any day of the CE month. This is due to different 'time duration' of Year vs Lunation BUT the best compromise can be achieved using $(5*47)=235$ lunation in 19-years along with 'TITHI' value of lunation/29 ½ = 1.001036908813559322 day i.e. 1d 0h 1m 29s.58892149. This is in close proximity of 138W/965; 19-years/6932 ½ or 235 lunation/19-years;*
8. *The leap year rules cause the timing of the equinoxes and solstices to vary by about 51 hours, which can be reduced if proposed/modified Gregorian calendar' leap year rules' were adopted (with or without Leap Days/Weeks)*
9. *The intercalary 'leap' day is inserted at the end of the sixth month i.e. June end – instead of at the end of the year, UNLESS a Leap Week be inserted as Leap Week of Year XXXX which reduce complexity in date calculations to some extent.*

(c) *Reasons for modifying or replacing Gregorian calendar are:*

The main reason could be the injustice of the International Date Line, which is very inconvenient for Western Europe, and is associated as: 'Zero Longitude' along with currently used Greenwich Mean Time (GMT) to determine local time at ANY spot on Earth. IT is suggested to shift 'date line from current 'Zero Longitude' to directly opposite i.e.180° away called "Greenwich Mean Longitude" – simultaneously addressing the 2½ day error crept in since 10-day Papal correction of 1582 October 05/14, in THIS format of the Modified Gregorian calendar. The irregular structure of the months, with month lengths ranging from 29 days to 31 days, pose NO serious problem in 4x13 weeks =364 days (along with Leap Weeks or World Peace Day & Leap Day).

Earth during its rotation cause 4 minutes per degree shift (time wise) for Sun to be overhead at 'every spot' on equator of Earth in 4x360 =1440 minutes i.e. 24-hours/one day. If the same time interval were used to 'Decimalise Time of the HOUR in relation to rotating Arc-angle of Earth' i.e. Hour-Angle as: $4 \times 15 : 6^2 / 3 \times 15 :: 60 : 100$. This results in $6^2 / 3$ minute per degree longitudinal transit of Earth across Sun, during its axial rotation. On dial face of clocks, simply added graduations/markings of 25, 50, 75 and 100 need be visualised along with 15, 30, 45 and 60 as at present, make the 'simplest' means to know and carry dual time on one's wrist. Please see: <http://www.brijvij.com/clockface-n-earth.doc>.

- 1. The Leap Day (366th day) Rule is improved for better Mean Year value: "An extra day is added at the end of the sixth month i.e. every four years, except in years whose number is divisible by 128; except in years whose number is divisible by 3200 getting Mean Year of Gregorian calendar. Mean Year obtained is $(365 + 31/128) = 365.2421875$ days if 3200-year clause is not applied!" 365th day is planned as World Peace Day, outside of the year format.*
- 2. The conventional 7-day-week cycle does not fit exactly into a Common Era year (there are always one or two days left over). A Leap Week plan based on $(7 \times 128) = 896$ -years/11082 lunation/159 Leap Weeks; or the alternate 834-year/10315 lunation/148 Leap Week provide reasonable options.*
- 3. Irregular structure of Modified Gregorian calendar pose NO problem in formulating schedules of planned events during the week structure, which leave option for calendar to be re-used from year to year.*
- 4. This irregularity makes it difficult to plan & design schedules which can be used in any quarter (of three months), term (of four months) or semester (of six months). This 4x13 week format provides a means to 'draw up schedules' for quarters/terms/semesters of 13/17/26-weeks.*
- 5. Despite the existence of a proposed standard way of date representation in ISO calendar, disparity currently continue expressed mainly as month-day-year (in the U.S.) or day-month-year (in Europe and most of the rest of the world). ISO 8601:2004 calendar on Descending Order Representation of Date And Instant Representation. It is proposed to use "H" between Date and Time of the Day (also using 'decimalised part of time of the Hour'. Any confusion among people in one part of the world reading documents/dates written by and for people in another part of the world, need implementation through 'highest governing body'.*
- 6. The months of the CE Calendar, although called "months", have no relation to the lunar cycles. This sequence of solar months and related sequence of lunation 'elapsed' can be harmonised via $(5 \times 47) = 235$ lunation close to 19-years – using Tithi value of lunation/29 ½ =*

1.001036908813559322 day i.e. 1d 0h 1m 29s.58892149. This is in close proximity of 138W/965; 19-years/6932 ½ or 235 lunation/19-years; determining a new moon or a full moon during any day of the month.

7. Other than a World Peace Day (365th day) 'the intercalary leap day' is inserted at the end of the sixth month i.e. June end every 4th year except during 128th years – instead of the current Leap Day Rule; UNLESS a Leap Week be inserted as Leap Week of Year XXXX which reduce complexity in count of days that determine Mean Year, and hence FIXING religious days like Easter. Samkranti, Baisakhi etc..
8. What holds the Modified Gregorian calendar which has the potential to overcome these 'known' flaws? If not then calendar reform, so far has evaded a possible solution to replace the currently used calendar, by another in which case a candidate for replacement NEED be brought forwards or at least improve upon the Calendar's accord – with the seasonal year while having minimal/none of the defects/anomalies so far known and mentioned.

RULES: Modified Gregorian Calendar

Reference: http://calendars.wikia.com/wiki/Modified_Gregorian_Calendar

- (a) The New Calendar shall have an 'improved Mean Year value' over Julian or running Gregorian calendar; and as far closer to current Average Astronomer's Mean Year Value;
- (b) Year format shall not be much different (for easy memorizing) months in the year, days in the month or cyclic days in the week – starting on Monday (01), Tuesday (02), Wednesday (03), Thursday (04), Friday (05), Saturday (06) and Sunday (07/00);
- (c) 12-months in the year shall have FOUR equal quarters & TWO equal half years (on inserting the Leap Sunday); OR have FOUR equal quarters with a Leap Week placed outside of the format, to account 'extra seven days' adjusting 1.242189669781 day over 364-day format, without causing any break in SABBATH cycle.
Leap Weeks: A year shall have the extra Leap Week, if and only if, year number is additionally divisible by SIX (6), unless it is one among the planned Additional Keplers' Leap Week of Year XXXX, as per cycle plan;
- (d) The 'new format' shall be easy to understand and follow, like the current popular calendars and cheap to implement;
- (e) Passage of Time count shall be linked to 'angular transit' of Sun-Moon-Earth in their orbital paths;
- (f) The calendar format shall basically be of SOLAR calendar, but also cater to LUNAR needs and used as 'lunisolar calendar'.

KEEPING THESE RULES IN MIND, FOLLOWING FORMAT OF A POSSIBLE WORLD CALENDAR IS SUGGESTED:

1. Format of this calendar NEVER has a 13th on Friday in any month; and starts on Sunday (00), Monday (01) thro Saturday (06) as week days, in continuation of Gregorian calendar – Monday, 2007 January 01 (JD 2454102).
2. Format of this calendar is made using 364-days in 12 months, with 4 EQUAL QUARTERS of 91-days (or 13 weeks) by shifting the day of July 31st to 'second month' i.e. February 29th during ALL years, leaving remaining 1.242189669781 days – to be accommodated as Leap Days or Leap Weeks.
3. 365th day of year (December 31st) is placed after December 30th but before January 01st of next year, as *World Peace Day*; A Leap Sunday is placed after June 30th but before July 01st once every four years, except the 128th – on modifying current Leap Day Rule *from div.4/skip100th/count 400th years TO div.4/ skip 128th* getting Mean Year =(365+31/128) days i.e. 365.2421875 days, from current values [Julian calendar= 365.25 days & Gregorian calendar =365.2425 days].
4. **Decimalisation of Time of the HOUR:** Distribution of time of the day in 24-hours *is retained*; instead the HOUR and the minute related to arc-angle are divided into 100 divisions (along with present 60) as: 24x60x60 (86400 second, s) =24x100x100 (240000 decimal second, (s_d) – the 'new time unit' – decimal second, s_d=36% of second, s and Arc-angles in a quadrant are likewise 'equated' as 90*x60'x60" =90*x100'-arcx100"-arc; bettering target resolution to 278%.
5. **Era and Keplers' Leap Weeks – "NEVER DID MAN INVENT A SYSTEM TO INSERT A LEAP WEEK USING Divide six (6) PLAN".** Era start is taken at $\{[(Y2000 - 80) \pm 128] \div 128\}$ i.e. Year Zero '0000'. 15*128=Y1920, which make the "first natural Added Keplers' Leap Week of

(Y2000+0093)=Y2013" after LY2010 & before LY2016, which being 'normal LWk years' divisible by SIX (6). Thus, YEARS DIVISIBLE BY SIX(6) shall have a Leap Week; and in addition *Added Keplers' Leap Weeks* are inserted at intervals of 90 or 84 as per cycle plan, the first insertion being 3-years earlier i.e. 87th when using (3*896)=2688-year plan. [Refer: http://www.brijvij.com/bbv_klwks_div.6.pdf]

6. Mean Year value is enhanced to $(365+31/128) = 365.2421875$ days from current values [Julian calendar=365.25 days & Gregorian calendar =365.2425 days]. A 1200-years cycle uses 13 AKLWks to result in current Gregorian Mean Year of 365.2425 days, on using Div.six (6) plan.
7. Same Mean Year (of 365.2421875 days) value is obtained when used with $7*128 = 896$ -years/159 (*div. six + Addl. Keplers' Leap Weeks*) LWks [$7*(52+159/896)=365.2421875$ days (365d 5h 48m 45s). Since 896-years is not divisible by six(6), $3*896=2688$ -yrs/477 (448+29) Leap Weeks give $7*(52+1/6+29/2688)$ i.e. 29 Additional Keplers' Leap Weeks are used/needed, when symmetrically placed. Please see: http://www.brijvij.com/bb_896-yrs-159lwk.pdf.
8. The alternate cycle of 834-years/148 (139 div.six+9 AKLWks) results in, closer to tropical mean year value = $7*(52+1/6+9/834)$ days =365.242206235012 days (365d 5h 48m 46s.6187).
9. **TITHI & LUNATION:** Using a 'new Tithi/Phase' value of ONE lunation/29 ½ 'tithi' make the lunar year =354.0 Tithi. *This tithi/phase value is 1.00103690881356 day (24h 1m 29s.5889). This 'tithi value' reconcile, and I believe, was 'the possible' value used during Indus/Harappa civilisation.* Other values closer to THIS are: $966/965 = 1.001036269430052$ day (24h 1m 29s.5337) =138week/965; 235 lunation/19-yrs =1.0000125031132 day (24h 0m 1s.08027). Other values in common use –
(a) $1/30^{\text{th}}$ Lunation =23h 37m 28s.0958, and (b) $1/29^{\text{th}}$ Lunation =24h 26m 20s.78873.
10. REWORKED values for DIVIDE six (6) years of most important cycles along with Mean Year/Mean Lunation and TITHI count are placed at: http://www.brijvij.com/bb_harappaTithi-Cycles.pdf. 19-years are closer to 235 lunation, distributed in (5*47) lunation (1388 day- blocks), ignoring differential 'in excess of 2 h 4m 56s.636' – to continued count of days/tithi, in estimating accurate new ***lunisolar cycle***. Apart from several cycles, among these I point to – TWO cycles which I discovered, apart from my (7*128) =896-years & 834-years, need special attention:
(a) 1730-yrs (1783 lunar years)/21397 lunation/631214½ tithi. Since 21397 lunation is short of THREE tithi (One tithi can be added symmetrically at intervals of 7132nd, 14265th & 21397th lunation). These added days/tithi 'automatically compensate' one lunation over 9 cycles of 1730-years (i.e. in 15570-years/192574 lunation). This is 812403 weeks.
Mean Year =5686821/15570 =365d 5h 48m 45s.78035 and Mean lunation =5686821/192574 =29d 12h 44m 1s.702.
(b) 399-yrs/4935 lunation (411.24435 lunar years)/145580½ tithi. 4935 lunation is in excess of TWO tithi (One tithi need be symmetrically removed at intervals of 2475 lunation).This 'compensate' one lunation over 15 cycles of 399-yrs (i.e. in 5985-yrs/74024 lunation). This is 312282 weeks & (2183710 tithi). Mean Year =2185974/5985=365d 5h 48m 37s.8947 and Mean lunation =2185974/74024=29d 12h 44m 4s.8503.
**(c) 896-years/11082 lunation account for 327257.001944123776 days [46592W+(149 div. six(6))+10AKLWk]= 46751 weeks]. 11082 lunation = 327257.98519242 days i.e. in EXCESS of 0.983248296224 day, getting Mean Year =7*(52+159/896) days. THIS can be compensated by ONE lunation in say, 896*29=25984 years – closer to ONE cycle of Precession of Equinoxes: http://www.brijvij.com/bb_Precession-n-896-yrs.pdf.
[Please note: 25984-years result in Mean Year =9490453/25984 =365.2421875 days (365d 5h 48m 45s.00); Mean Lunation =9490453/321377=29.530591797172791 days [29d 12h 44m 3s.1313].**

ACHIEVING THESE VALUES, to me appear, fascinating and comparable to any modern 'calendar values' for Reform of a futuristic Calendar.

COMPARISON OF PROPOSED SOLAR PERPETUAL CALENDARS

(Added on 20060207)

In view of studies of the problem 'concerning Calendar Reform, being made by individual governments', for the UN Secretary-General in 1947 United States felt that any additional study of the subject at that point in time - served NO useful purpose.

Accordingly, in reference to Secretary-General's note SOA 146/2/01, dated 1954 October 7, on World Calendar Reform, the then U.S. Representative to the United Nations, Henry Cabot Lodge, Jr., conveyed on March 21, 1955 to the United Nations that it does not favor any action by the United Nations to change the present calendar – favoring International Fixed Calendar based on religious grounds. The introduction of a *blank day* at the end of years, disrupted the seven-day sabbatical cycle, NOT being acceptable to opposition.

Comparison of proposed solar calendar reforms [Ref: http://en.wikipedia.org/wiki/Calendar_reform] (Gregorian/ISO Date equivalents)

Author	Wk	New Year's Day	Jan 1	Feb 2	Mar 3	Apr 4	May 5	Jun 6	Jul 7	Aug 8	Sep 9	Oct 10	Nov 11	Dec 12	13	Extra calendrical days	Intercalary days	Adopted at / starts at
Julius Caesar	7	Jan 1	31	28	31	30	31	30	31	31	30	31	30	31			A repeated Feb 24 every fourth year (bissextile day)	Adopted at January 1st, 45 BC but without a fixed starting date; years identified by the name of the consules at office or counted from the crowning of the Emperors; about 300 AD, and specially after the Christianization of the Roman Empire, years began being numbered by the Era of Martyrs , or by the Hispanic Era or just by the Roman Era , until the monk Dionysius Exiguus established the year 754 of the Roman Era as the year 1 of the Era Anno Domini .
Brij Vij	7	Jan.01 (Monday)	31	29	31	30	31	30	30	31	30	31	30	30	365 th (366 th) Wrld Day	Leap Day between Jun 30 & Jul 01	Leap Day is inserted on Div.4/skip128 th -years; alternately use Leap Weeks with 896-year/159LWks or 834-year/148LWks	Can be introduced on Monday as 2013 January 01 , after skipping 2 1/2 days 'correcting' the further calendar error since Papal correction of 1582 Oct.04/14; after midnight of 2012 December 21 st (Friday). This give Mean Year of 365.2421875 days or 7*(52+1/6+9/834)=365.24221 days. Both are closer to Astronomers Mean Atomic Day the Average of 4-cardinal points, during tropical year.
Gregorius XIII	7	Jan 1	31	28	31	30	31	30	31	31	30	31	30	31			A 29th day is added to the month of February in every year divisible by 4, except the years divisible by 100 which are not divisible by 400; if the year is divisible by 100, it will be a normal year -unless if it's also divisible	Adopted at Oct 15th, 1582 AD (or, at the Julian date of October 5th, 1582 AD). Non-proleptic.

Romme	10	W01.1, N. Aut. Equinox, 01.01	30	30	30	30	30	30	30	30	30	30	30	30	Sansculottides (12.31-35)	(12.36) (W37.8)	Adopted at Oct 24th, 1793 AD Starts at Sep 22nd, 1792 AD.
Comte	7	Monday, Jan 1 (01.01)	28	28	28	28	28	28	28	28	28	28	28	28	Leap D. (07.00), Year Day (13.29)	Leap D. (07.00) (W27.0)	
Colligan	7	Sunday, Jan 1	28	28	28	28	28	28	28	28	28	28	28	28		Leap week 13.1-7 moving Dec from 13 to 14	
Achelis	7	Sunday, Jan 1	31	30	30	31	30	30	31	30	30	31	30	30	World Leap D. (Jun 31/ 07.00), World D. (Dec 31/ 12.31)	World Leap D. (Jun 31/ 07.00) (W27.0)	
Asimov	7	Sunday, N. Winter Solstice, 01.01	91	91	91	91									D-92 (04.92), B-92 (02.92)	B-92 (02.92) (W27.0)	
Bromberg	7	Monday, Jan 1	28	35	28	28	35	28	28	35	28	28	35	28		Dec 29–35	
McClennon	7	Monday, Jan 1	30	30	31	30	30	31	30	30	31	30	30	31	*		*Newton 07.1–7, moves following months forward 1 A 29th day is added to the month of February in every year divisible by 4, except the years divisible by 100 which are not divisible by 400; if the year is divisible by 100, it will be a normal year -unless if it's also divisible by 400.
Cesare Emiliani	7	Jan 1	31	28	31	30	31	30	31	31	30	31	30	31			Starts at January 1st, 10000 BC

Updated by Brij Bhushan Vij, Author of Modified Gregorian Calendar.

See Home Page: <http://www.brijvij.com/> (20100714H17:05)

Aristeo Fernando initially presented a comparison between the Aristeian calendar and Henry's Calendar & Time Plan in the calendar discussion list, CALNDR-L, on 24 January 2005. Karl Palmen added seven other proposed solar perpetual calendars in the comparison on 25 January 2005. Below is what Mr Palmen presented which Mr Fernando tabulated and grouped into three kinds (with some minor changes):

1. 28 days per month - International Fixed Calendar (IFC), Colligan's Pax Calendar (Pax), and Raventos Symmetrical Calendar (Rav).

	between June and New Month (Sol or Midi)					and July 1				Leap Day between Jun.30 & July 01 (when used) 293yr/3624 Lunation
Leap Day (s) at end of year	No	No	Yes	No	Yes	No	No	Yes	Yes	No
Months (all have months January to December	13 including month of Sol or Midi between June and July	13 including Columbus between November and December + Pax in leap years	13 including Vacance between July and August	12 + the mini-month every leap year	12 + leap week	12	12	12	12	Yes, 12 months (Feb. has 29 days & July has 30 days). All others as per Gregorian calendar
Deleted dates from Gregorian calendar	29 th , 30 th , and 31 st days of months	29 th , 30 th , and 31 st days of months	29 th , 30 th , and 31 st days of months	Jan 31, May 31, Jul 31, Aug 31, Oct 31 (5 dates)	Mar 31, May 31, Aug 31, Dec 31 (4 dates)	Mar 31, May 31, Aug 31, Dec 31 (4 dates)	Mar 31, May 31, Aug 31 (3 dates)	29 th , 30 th , and 31 st days of Feb, Mar, May, Jun, Aug, Sep, Nov, and Dec	29 th , 30 th , and 31 st days of Jan, Mar, Apr, Jun, Jul, Sep, Oct, and Dec	July 31 shifted to February as Feb.29 (All years) – on modification.
Friday the 13 th	In all 13 months	In all 13 months	None	In four months (Jan 13, Apr 13, Jul 13, and Oct 13)	Four months or none	In four months (Jan 13, Apr 13, Jul 13, and Oct 13)	None	In all 13 months	None	TWO or THREE depending on how the format is used (from Year Start).
Days outside of 7-day week	Leap Day and New Year's Eve	None - 7-day week uninterrupted	December 29 and Leap Day (December 30)	None - 7-day week uninterrupted	None - 7-day week uninterrupted	Leap Day and New Year's Eve	Leap Day and New Year's Eve	None - 7-day week uninterrupted	None - 7-day week uninterrupted	December 31 as World Day & Leap Day; or NONE if used with Leap Wks.
Calendar weeks that agree with current 7-day week	About 1 in 7 weeks	All weeks	About 1 in 7 weeks	All weeks	All weeks	About 1 in 7 weeks	About 1 in 7 weeks	All weeks	All weeks	Start of Calendar on a SUNDAY, Dec.21/22 suggested
All months begin on	Yes	Yes	Yes	No	No	No	No	Yes	Yes	No

same day of week										
Approximate variation of new year against seasons	2 days	2 to 3 weeks	2 days	1 week	2 to 3 weeks	2 days	2 days	2 weeks	1 week	(Not assessed) Around 2 days; expect to be less than 2 weeks when used with LWks plans.
Every month but one the same each year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	YES All months similar with pre-set dates.

IMPORTANT: VGR calendar improve Mean Year value to: $(365+31/128) = 365.2421875$ days; also $7*(52+159/896) = 365.2421875$ days.

The URLs of these calendar proposals are:

IFC - <http://personal.ecu.edu/mccarty/eastman.html>

Pax - <http://personal.ecu.edu/mccartyr/colligan.html>

Rav - No working URL (unless you know otherwise)

C&T - <http://henry.pha.jhu.edu/calendarDir/calendar.reform.html>

RWC - <http://www.go2zero.com/rwc/rwc.html>

WC - <http://personal.ecu.edu/mccartyr/world-calendar.html>

Aristean - <http://www.geocities.com/peacecrusader888/calendaridx.htm>

BCC - <http://personal.ecu.edu/mccartyr/bonavian.html>

454 - <http://individual.utoronto.ca/kalendis/symmetry.htm>

VGR Calendar - <http://homepage.ntlworld.com/genesis.revealed/> & <http://www.brijvij.com/> (under development).

*File: comparesolar.htm - Last updated: 2005 February 8. [Modified: Brij B. Vij – 20060214, for comapative study]

(modified 20100626H16:05)

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