(https://www.independent.co.uk/news/world/americas/leap-year-february-calendar-days-year-professors-john-hopkins-university-a9355746.html, retrieved 2/27/2020)

University Professors Want To Abolish Leap Years And Create New Calendar

The calendar in its present 365-day form dates back to Republican Rome; professors at John Hopkins University think it is time for an update

Ben Guarino, *Washington Post*,[1] 24-26 February 2020

February 29s, like the one tacked to the end of this month, exist because Earth's orbit and human calendars are slightly out of sync. The planet completes its 584-million-mile loop around the sun in 365 days—plus 5 hours, 48 minutes and 46 seconds. Leap days are designed to compensate for the excess time.

But, if two Johns Hopkins University professors had their way, this leap year would be the last of its kind. They would replace the calendar with a new version. Theirs, the Hanke-Henry Permanent Calendar, is 364 days long. It is consistent: the year always begins on a Monday.[2] Your birthday always falls on the same day of the week. "The calendar will be exactly the same, every year," said Richard Conn Henry, an astronomer at Johns Hopkins University and one of the calendar's designers.

February would always have 30 days, as would January, April, May, July, August, October and November. The other four months would have 31 days. There would be no February leap days. Instead, "every five or six years," Mr Henry said, "we'll have an extra week at the end when you can party."[3]

It's bold, keeping in the spirit of calendrical reforms. The calendar we use today was hundreds and hundreds of years in the making. About 46 BC, dictator Julius Caesar reworked for the Roman republic a 365-day calendar, devised by Egyptians, to include a leap day. That was more accurate than previous calendars, but it wasn't perfect—each Julian year added an extra 11 minutes and 14 seconds.

Over the centuries, the bonus minutes added up. The seasonal position of the planet and the calendar diverged. The Easter holiday split away from the vernal equinox and crept toward summer. This so distressed Pope Gregory XIII he changed the calendar by papal bull, "Inter Gravissimas,"[4]

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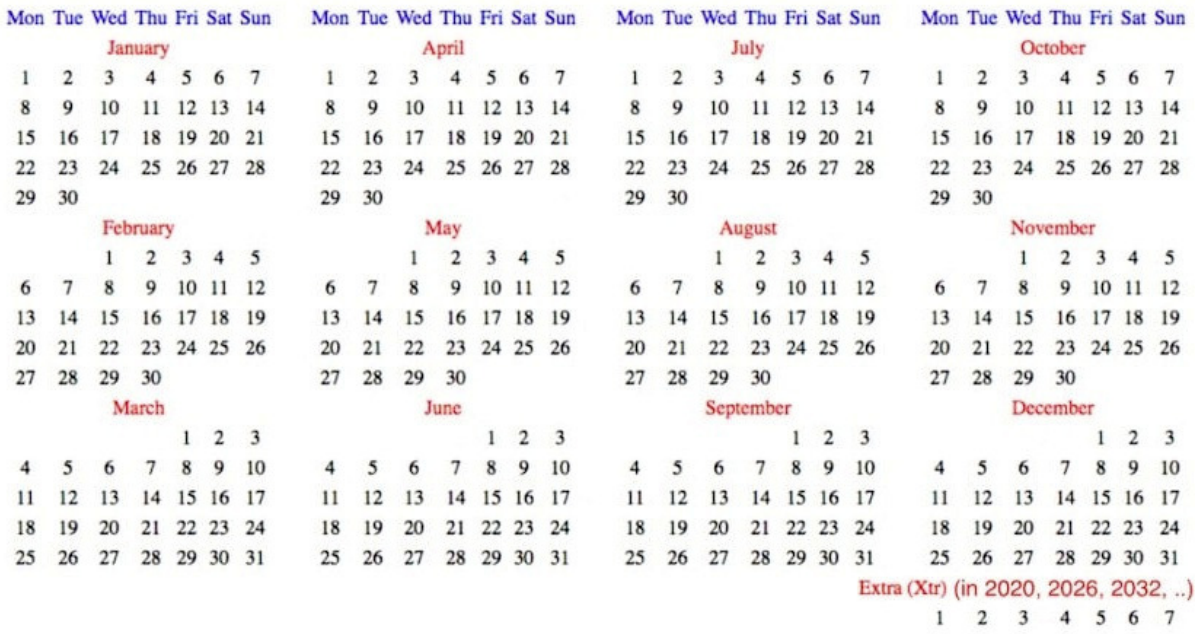
[2] JOS: 364/7 = 52, an even number of weeks. But it means we fall behind the actual solar year by about 1.25 days per year.

[3] JOS: So instead of an extra *day* every 4 years, except for the Gregorian periodic adjustments, we have an extra *week* every 5 or 6 years—which is it? or does it vary? And what about the fine adjustments similar to the Gregorian calendar? or is that where the "5 *or* 6 years" comes in? So we still have a leap year, which varies, but now it entails an extra week instead of an extra day. That certainly harkens back to the original adjustments, which amounted to an incalation of months.

[4] http://myweb.ecu.edu/mccartyr/inter-grav.html



The proposed Hanke-Henry Permanent Calendar, which is 364 days long except for a bonus week every five or six years. (Steve H. Hanke and Richard Conn Henry) *The Washington Post*

Latin for "among the most serious," as he referred to his obligation to make the change.

To reset the drifting holidays, the pope erased 10 days. In Italy, Spain and other European countries, the day after Thursday, Oct. 4, 1582, became Friday, Oct. 15. To prevent the drift from happening again, the pope kept leap years but decreased their frequency. Under the Gregorian calendar, a year that is divisible by 100 must also be divisible by 400 to be a leap year (in other words, 1900 wasn't a leap year, but 2000 was). This calendar also established the leap day as 29 February.

Outside Roman Catholic countries in Europe, the world was slower to adopt this new calendar. Britain and its colonies didn't follow the Gregorian calendar until 1752. "There were riots in Britain that year," Princeton University classics professor Denis Feeney told *The Washington Post* in 2017. "People wanted their 11 days back." Birthdays shifted with the switch. George Washington, for instance, was born on Feb. 11 in the Julian calendar. After 1752, his birthday became 22 February.

"The Gregorian calendar was set up by astronomers, people who knew what they were doing, and it is very accurate," Mr Henry said. "That's the problem. We don't need a terribly accurate calendar. What we need is a calendar that is suitable for human beings to order their lives by."

Henry enlisted his colleague at Johns Hopkins, economist Steve H Hanke, to help. "Dick brought this up and basically gave me an assignment: 'Hanke, find out the economic implications of this thing,' " Mr Hanke said. Hanke estimates the upfront costs would be less than the Year 2000 adjustment, which, in the United States, was about $100 billion (£77.4b). "The benefits, from just not having to reproduce calendars every year, physical calendars, would pay for the thing right away," he said. Having the date fall on the same day of the week every year eliminates inefficiencies with planning and scheduling that the "herky-jerky" Gregorian calendar has, Mr Henry said.

Every so often, in the Gregorian calendar, companies add a week to their fiscal quarters. Apple did so in the first quarter of 2012, and reported "very good, strong earnings," Mr Hanke said. "Of course, they had an extra week of revenues coming in." A year later, Apple's first quarter of 2013 appeared comparatively weak—because it lacked the benefit of an extra week, Mr Hanke said—and

the company's stock dropped. "Our calendar fixes that problem," Mr Hanke said, because business would consistently operate on 91-day quarters.

Under their calendar, the major US federal holidays, except for Independence Day (and Thanksgiving), fall on a Monday. Christmas would be on a Sunday, forever. "You won't be interrupting a week with a federal holiday on a Wednesday or Tuesday," Mr Hanke said. "This disruption avoidance will save a lot of money: our calculations are that about $575 [£445] per year per person in terms of economic losses that will be avoided, because you'll have the long break on the weekend."

When he explains the new calendar, Mr Hanke said, people seem most upset their birthdays will always occur on the same day of the week. Pointing to Queen Elizabeth II for inspiration, he suggests they become more flexible in their celebrations. "The queen celebrates her birthday much later in the year than her actual birthday, because the weather's better in London," he said.

It took a Caesar, and then a pope, to successfully reform the calendar. Henry and Hanke argue a president could do it. "There is one person who could enact it, and he could enact it immediately. And that is President Donald John Trump," Mr Henry said. "And if I could have half an hour with him in the Oval Office, we would be adopting it this year. There's no question about it." (The president would ultimately be persuaded, the astronomer argued, because he would get to rename the calendar after himself, in the tradition of Caesar and Pope Gregory.) "We have drafted up an executive order for Trump to sign," Mr Hanke said.

He predicted the states would follow suit after the federal government, then businesses and, ultimately, the world.

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