

Happy Papal Bull Day!

Written by Alex Baer

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In the song, it's ten lords a-leaping. Outside that tune -- where people live remarkably full lives without hens, swans, geese, turtle doves, and partridges underfoot -- it's seven billion or so left a-leaping today, almost the whole planet now doing it, and doing it by decree, called a bull, by a pope, long ago. So, Happy Papal Bull Day!

Pope Gregory XIII gave his name and breath of life to the Gregorian calendar we now automatically use, back in February of 1582. It built its fanbase from there, eventually becoming the accepted secular calendar for the western world -- slow adoption and Protestant Reformations notwithstanding, in which papal edicts were given cold-shouldered snubs.

The change, way back when, 430 years ago, was trying to right a wrong in the old way of measuring the progression of days, using the Julian calendar, named after Julius Caesar who gave it a debut in 45 BCE. As you can see, we are in the *Way-Way Back Time Machine*, now.

One key problem was that time was wonky and way off, off by 11 minutes or so. This may seem like a trick problem with apples and ocelots, or the average number of feet in a liter, asking about minutes on a calendar, but here goes:

Advocates of Julian calendars thought the time between vernal equinoxes was 365.25 days, right on the button. *Oops*: It's actually shorter than that, by 11 minutes or so. No big deal, but if you are the Roman Church, likely to take a *verrrry* long view of things, you'd notice spare days starting to pile up. Every four centuries you've got three extra days on your hands, seemingly popped out of the void, no idea where they came from.

One supposes they could have left it alone at that point, periodically declared a special *Festival of Bonus Days* every 400 years, but you know how that would work out: You give one generation a three-day run of bonus partying days, sunup to sunset, next thing you know, they've all got to have one. Good luck to saying, at that point, in parental voice, "Do as I say, not as I do," when it comes to three days of bonus partying held in the balance and sway.

Of course, at that point, religious officials could have caved and converted everything over to *Th*

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ree Somber Days of Prayer and Fasting

instead, but they probably weren't thrilled at the thought of needing to rebuild all the churches every 400 years -- were likely vested, and invested, to keeping peasant rioting at a minimum.

Back to calendars: Easter celebrations were tied to the spring equinox; left unchanged, the day would march all over the calendar. Add to that problem another, the cross-current of calculating phases of the moon to determine the date of Easter, and, pretty soon, calculations and their calculators were falling both up and down stairs.

Talk about mayhem: Vernal equinoxes were moving backwards in calendars to account for accumulated differences. By the time of the calendar conversion, 10 days were carted off to the dump, as leftovers, back then. *In the real olden days, they had plenty of time to kill, it appears.* When Russia and Greece made their calendar conversion, in the 20th century, they had to let go 13 of their spare, perfectly-good, never-been-used, factory-sealed, days. *They could get a fortune for them today, of course. ☐ Thinking time-shares, here, if nothing else.*

There might have been some new homilies created around then, too, something about "Not counting your days before the calendar confirms that you've lived them," but it may be that chickens -- hatched and unhatched -- filled that particular need of counting and expressing.

In the end, despite the incredible bother, it was just easier to change the dang calendar, and settle the increasing math-awareness of all accounts, and, all in one fell swoop, and just let everyone catch up, best they can, willy-nilly, catch-as-catch-can.

It's amazing to think they could have puzzled this out, pre-computer, using human fingers and toes, all that time ago -- but, there you go, and, here we are. The calendar provides mostly smooth going, but provides a small hiccup every four years. In the end, the solar year differs from the Gregorian calendar by only 26 seconds, which is not bad, as human reckoning goes -- off by a day, every 3,323 years.

So, we've arrived: The leap year and its rules provide a way to synch us up with the Universe, in our small way, and provide chances to tinker with, and then stuff solar system time in a can, fairly neatly and accurately, up on the shelf, where we can easily get at it, without too much time leakage, without any whole days falling out. *Time in a bottle, calendars in a can.* Happy

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hiccupping.

Recommended: <http://www.infoplease.com/spot/gregorian1.html>, and, Wiki, of course, among others served up hot on search engines, re: [Gregorian and Julian calendars](#). Take a minute out today and explore time -- now that there's time!