Science and superstition collided when an apocalypse was predicted to strike the United States in December 1919. Nick Yablon
On 10 August 1919 the Washington Herald ran the headline: ‘Planets Moving Into Huge Danger Zone; Earth Will Stagger From Mighty Shock’. In four months, warned Albert F. Porta, an Italian-born academic, seven planets would assemble on one side of the sun. Their collective electromagnetic pull, combined with the counterpull of Uranus, would induce a massive sunspot on 17 December, a ‘gigantic explosion of flaming gases, leaping hundreds of thousands of miles out into space’. This would trigger the ‘greatest weather cataclysm’ in human history. For at least four days, he predicted, ‘there will be hurricanes, lightning, colossal rains ... gigantic lava eruptions, [and] great earthquakes, to say nothing of floods and fearful cold’.

Newspapers across the country and beyond began to reprint Porta’s prediction. The discovery in November of a new comet lent force to the prophecy, as did a meteor that landed in Lake Michigan in early December. The offices of newspapers, observatories and the US Weather Bureau were inundated with enquiries. ‘Would you be so kind as to inform [me]’, Myrtle Riley of Cincinnati wrote to her local observatory, about ‘the authenticity of such rumors concerning the end of the world, to occur on Dec. 17th?’ Such ‘perturbation’ prompted the Weather Bureau chief to issue a statement denouncing the ‘alarmists’ and affirming that ‘there is no ground for expecting any extraordinary happenings at this time’. Yet the fears persisted. Some took precautionary measures, fortifying homes or depositing their valuables. Others abandoned homes, jettisoned belongings and savings.
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<tr>
<th>Planetary Phenomena</th>
<th>Spot's Name</th>
<th>Original Dist.</th>
<th>Original Ang. Diat.</th>
<th>TO BE FROM</th>
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<td>SEPTEMBER 8, 21</td>
<td>OPP. of VENUS</td>
<td>46°</td>
<td>3,09</td>
<td>Sept</td>
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<td>NEPTUNE</td>
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<td>133°</td>
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<td>2,55</td>
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<td>JUPITER</td>
<td>108° 18″</td>
<td>6,81</td>
<td>Oct</td>
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<td>OPP. of MERCURY</td>
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<td>5,95</td>
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<td>SATURN</td>
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binged on alcohol, or (according to some reports) committed suicide. ‘There is no doubt’, wrote the New York Sun, ‘that in the aggregate the number of those who took the matter seriously was very large.’

We might be tempted to ascribe this agitation to apocalyptic religion. With the rise of Adventism and other movements in the second half of the 19th century, there had been an upsurge in prophecies of the world’s end. Overcoming the ‘Great Disappointment’ that followed William Miller’s proclamation of Christ’s second coming in 1844, Second Adventists such as Jonas Wendell made further apocalyptic projections for 1868 and 1873\textsuperscript{4}, while also disseminating Charles Piazzi Smyth’s 1876 prophesy, derived from the dimensions of the Great Pyramid of Giza, that the world would end in 1881. Michael Paget Baxter, a British evangelical preacher with a quarter of a million US subscribers, scheduled Doomsday for 1901, then 1903 and, finally, 1908. Charles Taze Russell, founder of the Zion’s Watch Tower Tract Society (which became the Jehovah’s Witnesses) issued a succession of end dates before settling on October 1914. Newspapers identified Porta’s 1919 prediction with this enduring tradition of millenarianism from medieval and early modern Europe.

Journalists also attributed the panic to ‘primitive’ mentalities. The Seattle Star urged its readers to ‘brush out of our minds a lot of superstition and animal fear, that seems to thrust us back to cannibalism and voodooism on the slightest pretext’. Newspapers transferred this charge of residual superstition onto social groups deemed ‘backward’. They circulated apocryphal stories about the naiveté of the working class, the rural and the religious: miners in Oklahoma who were too frightened to go underground, or an Ohio farmer swindled into paying $15 for a ticket to a non-existent end-of-world religious convention. They also projected these anxieties onto women, describing how some postponed their society meetings ‘in view of the impending eventualities’. Most of all, the press singled out the supposed credulity of ethnic groups. African Americans in Atchison, Kansas, reportedly spent the last night on earth ‘in prayer, dressed in “ascension robes”’. Native Americans in Oklahoma communicated their forebodings by dancing, chanting and ‘beating … the tom-tom can’. Immigrants in Washington state ‘sent for
their relatives in order that all might knock at the pearly gates together’. When a telegram about Porta’s prediction reached Mexico City, it induced an ‘indescribable panic’ among ‘all grades of society’, including multiple instances of nervous breakdown and suicide. In another report, 500 Puerto Rican students demanded early recess so as to be with their families when the world ended. Reading such stories, white middle-class readers could affirm their worldliness.

Yet, the delirium of late 1919 cannot be blamed on marginal groups who were supposedly unwilling or unable to embrace modernity. A closer examination reveals that it was in fact a product of modern developments. Unlike earlier apocalyptic prophecies, Porta’s was secular, emerging out of the new phenomenon of ‘scientific’ weather prediction and out of the conditions of urban life. Rather than simply reporting the fears, mass-circulation newspapers inflamed and disseminated them across and beyond the nation. The episode resonated with other secular events of that year, from the failure of the US to join the League of Nations, to the flu pandemic.

Porta’s predictions
For several years, Porta had been providing newspapers across the country with predictions of major storms, based on planetary movements that supposedly caused sunspots. He adopted this approach from Father Jerome Sixtus Ricard, a Jesuit astronomer at California’s Santa Clara University. Arriving there in 1907 as a professor of civil engineering, Porta ended up working as the astronomer’s assistant. After two years, he left to establish his own weather service, while continuing to invoke Ricard’s name and methods, much to the latter’s displeasure.

Porta’s growing reputation emboldened him to extend his forecasts’ geographical range beyond California and their temporal range to 30 days and ultimately several months and to encompass non-meteorological phenomena. By 1915, he was predicting earthquakes and volcanic eruptions around the world, allegedly with some success. In April 1918, he blamed the Spanish flu on Jupiter, while assuring that it was now ‘on the wane’ as the planet was passing (the epidemic broke out again in January 1919). He retroactively attributed disasters, such as San Francisco’s 1906 earthquake, to sunspots, too.

This faith in the predictive power of planets culminated in his prophecy of a perfect storm of seismic and meteorological events for December 1919. The prophecy derived from a close reading not of biblical passages but of the position of the planets, as detailed in the US Naval Observatory’s nautical almanac.

Forecasting the weather from planetary movements and sunspots might appear to be a primitive holdout against the emerging science of weather forecasting. Since its founding in 1870, the US Weather Bureau had worked to rationalise the business of predicting the weather, just as other agencies were seeking to tame the uncertainties of crop yields, stock market fluctuations, or demographic changes. The Weather Bureau would record conditions around the country, using modern instruments such as thermometers, anemometers, hygrometers, barographs and rain gauges. With the telegraph and later the telephone, it established a network of trained ‘observer-sergeants’ who communicated this data to a central office, where future trends would be extracted. As a professional body, the Weather Bureau distanced itself from amateurs like Porta and Ricard, deriding them as ‘charlatans’ or ‘soothsayers’. It further differentiated itself by eschewing the terms, ‘weather prophecy’ and ‘weather prophets’, in favour of the modern term, ‘forecasting’; by disdaining – and, after 1894, forbidding – the kind of commercialism that surrounded amateur predictions, such as the 1919 advertisement for hail insurance that cited Porta’s prediction of storms for the region; by refusing to dabble in long-range forecasts; and by predicting ordinary conditions as well as extreme weather events. Its denunciation of Porta’s prophecy as ‘Tommy Rot’ reinforced the idea of amateurs as phoney, or at best outmoded – a campaign that echoed other Progressive Era campaigns, such as the crackdown on patent (or ‘quack’) medicines, adulterated food and false advertising.

Yet, the as historian Jamie Pietruska has shown, the bureau’s rhetoric, designed to establish its authority, obscured the status of the planetary forecasters. Rather than harking back to ancient practices of divining the weather – observing animal behaviour or the Moon’s phases, or invoking folklore – Ricard and Porta claimed sunspot theory to be a science yielding accurate, long-range forecasts. They saw their
work as complementary to the Weather Bureau. Porta explained that the '+[weather+] laws that I have formulated after many years of scientific investigation [+are+] laws of limitless possibility for benefiting humanity, yet [+are+] confronted, as all new discoveries are, with the prejudice and indifference of those who always oppose progress'.

The notion that weather correlated with sunspots, although rejected by many scientists, was well received by some and publicised in magazines, such as Popular Science, which endorsed it as late as 1918. Even the Smithsonian Astrophysical Observatory's director Charles Greeley Abbot took it seriously, although he queried its application to non-meteorological phenomena such as 'bank failures and commercial crises … wars, and even flights of butterflies'. Nor were these amateurs necessarily less accurate – or perceived to be less accurate – than Weather Bureau professionals. The success of Ricard's predictions earned him the tag 'padre of the rains'. By contrast, the Weather Bureau failed to foresee the Great Blizzard of 1888 and was upstaged by an amateur who did. Planetary forecasters subtly influenced the Weather Bureau, pushing it, for instance, to go beyond 48-hour forecasts in 1908 and to release data to the public. It was not so easy, then, for readers to dismiss Porta's 1919 prophecy as the work of a weather quack or religious doomsayer.

Of course, Christian prophets had long invoked science, especially astronomy. The
ability to view a comet through a telescope (achieved by Gottfried Kirch in 1680) and to track its orbit and predict when it would reappear (demonstrated by Edmond Halley in 1682) encouraged millenarians to identify the precise date on which the world would end. In 1736 the Newtonian scientist and apocalyptic theologian William Whiston caused panic in England by predicting that a comet would collide with Earth on 16 October that year, ushering in the end times. Visions of comets as harbingers of the apocalypse and instruments of divine judgment surfaced in America, in the 18th-century sermons and writings of Cotton Mather, the mathematician John Winthrop and others. And the appearance of a comet in 1843 allegedly helped the Millerites, attract new followers.

Yet, whereas those figures invoked physics and astronomy to make their religious visions more credible, there was no divine agency behind Porta’s theories. The upheavals of December 1919 would not fulfill some chronological pattern, nor would they reveal or uncover – the literal meaning of the Greek word, *apokálupsis* – the hidden truth of God. Although Porta’s prediction did reportedly inspire some to return to church, to fast and to offer scriptural

‘Developments in astronomy raised the possibility of a more secular apocalypse’
verses to aid their brethren in preparing themselves ‘to meet the coming’, he offered no reassurance of Christ’s return. In fact, he did not mention God at all; it was simply a matter of meteorology and geology. Perhaps for this reason, the Seventh Day Adventists gave no credence to his prediction for 17 December, even though they believed the end was near. ‘The rank and file of the church people’, confirmed San Jose’s Mercury Herald, ‘do not appear to be worried.’

Watershed
The Porta episode thus marks a watershed in the emergence of the secular apocalyptic. Scholars disagree about when this first emerged. W. Warren Wagar dates it back to Romantic writers such as Mary Shelley, who refrained from attributing the plague in The Last Man (1826) to God, whereas Christopher Lewis and Michael Barkun view it as a more recent phenomenon, introduced by scientists in the 1930s or 1960s. Yet, profane visions of the end were widespread by the 1910s. Science fiction novels and pulp magazines envisioned apocalypses brought about by comet collision, climate change, plague, war, or technologies running amok. Coney Island offered apocalyptic entertainment for the masses from pyrodrmatic and electrical re-enactments of historical disasters to Dreamland’s ‘wonderful spectacle’ of ‘The End of the World’.

Rather than dispelling this preoccupation with apocalypse, scientific progress fostered it. Discoveries such as evolution and the laws of thermodynamics enabled scientists by 1900 to envision how the human species might die out without the aid of God, through natural selection or the sun’s entropy. Advances in astronomy raised the possibility of a more immediate end. When Halley’s Comet came into view in 1910, the Yerkes Observatory detected cyanide in its tail – enough, warned the astronomer Camille Flammarion, to ‘snuff out all life on [our] planet’. Such examples belie the characterisation of modernity in terms of the ascendance of a mechanical, scientific conception of time as linear, continuous and unending and the erosion of older, cyclical or religious conceptions of time. Instead, scientific time co-existed with – and even stimulated – apocalyptic timelines.

Anxiety about Porta’s prophecy appeared most acute in cities. Early in the morning of the appointed day, a steam whistle at a railroad roundhouse in Indianapolis got stuck, resulting in ‘long weird, shrieking’ that triggered ‘practically all sirens in the city’. This malfunction, evidently exacerbated by the increasing interconnectedness of technologies within the urban infrastructure, caused many locals to query their newspaper office whether it was ‘notice of the end of the world’.

The panic also spread to foreign cities. Waking up to -15° F cold, Montrealers asked newspaper offices whether it should be ‘interpreted as the beginning of the end’. In Paris, there was such widespread alarm that gendarmes were dispatched on bicycles to arrest vendors of broadsheets announcing Porta’s prophecy. Reporters viewed the fears through the lens of local phenomena: one recounted how ‘a large part of London’s population stayed awake all night’, their ‘gloom’ exacerbated by the fog enshrouding the city, while the Perth Daily News reported that rumours of cataclysm ‘travelled like a bushfire’. The global dissemination of the panic might have stimulated recognition of the links between nations, after a four-year conflict that had exposed their differences.

Whereas apocalyptic fervour was traditionally transmitted through sermons and religious publications, this panic was spread by the very newspapers that reported it. Not only did these urban institutions – including both the ‘respectable’ Washington Herald and the sensational ‘yellow press’ – print Porta’s prophecy, they also inflated it. Porta himself had predicted cataclysmic but not apocalyptic events; after ‘some weeks’, he wrote, the Earth ‘will regain its normal conditions’. It was the newspapers that subsequently inserted the possibility of the world ending. Further, smaller distortions crept into the reports – a kind of ‘telephone game’ effect of one newspaper relaying information from another – such as that Porta was a professor at the University of Michigan, that his first name was Allen, that he was French, or that he lived on the outskirts of Los Angeles. More critical journalists denounced the newspapers for wilfully manipulating or ‘embroidering’ the facts. The London Observer saw it as emblematic of how the ‘American Press ... create[s] sensations on very slender foundations’, while the standard bearer of progressivism, the New York Tribune, criticised ‘every daily newspaper’ for exploiting the story
and doubted whether ‘a single one of the city editors stopped to think’ before running it.

In these criticisms, we see an emergent discourse about the corrupting effects of the news media, specifically their capacity to implant irrational fears among the masses. In his landmark *Social Psychology* (1908), the US sociologist E.A. Ross, drawing on French sociologists Gustave Le Bon and Gabriel Tarde, described the masses as having the instability, excitability and suggestibility of a crowd – tendencies he thought feminine, infantile and primitive – and warned of the capacity of newspapers to inflame this ‘mob mind’. The pioneer of social group theory, Charles Cooley, elaborated a year later on how mass-circulation newspapers create a virtual crowd that exhibits a similar nervousness. ‘Modern conditions enable such contagion to work upon a larger scale than ever before, so that a wave of feeling now passes through the people, by the aid of the newspaper, very much as if they were physically a crowd.’ Rather than eradicating the oral tradition of gossip, he also wrote, newspapers have enlarged and organised it, ‘gratifying an old appetite in a new way’. Although less pessimistic than their French counterparts about the implications for democracy, Ross, Cooley and other US sociologists shared their concern about the unruly passions that newspapers could unleash in the masses. Ross was critical of the violent hostility toward immigrants, blacks and alleged communists during the Red Scare of 1919, which was stoked by fear-mongering stories circulated by mainstream newspapers.

**Temporary relief**

Yet, those who consumed rumours about the impending apocalypse were not necessarily succumbing to mass irrationality. Editorials from the time hint at the deeper meanings and promises the public found in Porta’s prophecy. For some, it was the promise of temporary relief from the everyday concerns of modern, urban life and the hope of a redemptive rupture in the continuity of history – a utopian longing also found in religious strains of millenarianism. Apocalyptic predictions, wrote the columnist and poet Ben Hur Lampman, allow one to forget ‘the troublesome cost of coal ... the shortage of sugar or the advance in streetcar fares. In the same cataclysmic glory that would abolish magnates and mortals ... all frets and furies would flame into the ashes of the moribund planet’. Interminable time thus fostered the anticipation of a fulfilling and all-consuming climax. Reading about Porta’s prophecy in their subways, luncheonettes or apartments, city dwellers could experience something like a re-enchantment of their lifeworld.

The prophecy also enabled newspaper readers to reframe the traumatic historical events of recent years through an apocalyptic lens, thereby reasserting a sense of pattern and direction. Another journalist and poet, James Larkin Pearson, expressed such a vision in his popular, one-man newspaper, *The Fool-Killer*, which advocated socialist revolution and exposed the hypocrisy of mainstream religions and parties. While acknowledging that astronomers had debunked Porta’s prediction and that he himself was ‘inclined to think it could not amount to much’, Pearson insisted on viewing it from a ‘prophetic standpoint’, as confirmation that the current age (although not the world itself) is coming to an end.

The article nonetheless concluded with a secular prayer: ‘Let us hope that a new and better day of peace is about to be ushered in, even though it should not be in literal fulfillment of the highly figurative language of apocalyptic literature.’ Porta himself opened the door to pacifist interpretations by referring to the imminent astronomical grouping as the ‘League of Planets’. (Alternatively, he could be seen as endorsing the United States’ refusal to join the League of Nations by associating it with malevolence.)

For all the apprehension, most of the country awoke on 17 December to sunny weather and – at least in California – above-average temperatures. After exaggerating the fears of certain social
groups, newspapers now proceeded to characterise the populace as unperturbed. Earth’s ‘Last Day’, announced the San Jose Mercury News, was ‘lightly taken by the city’. It attributed this equanimity not to the innate scepticism of the American public, but to their recent experience of war, which seems to have rendered them ‘calloused’ and also to their realisation that there ‘are too many things to be done. The [Industrial Workers of the World] question must be settled, ... the peace treaty with Germany ... enforced. The world refused to recognize the right of interference in such an epochal time.’ Newspapers, including the Mercury News, also attributed Americans’ composure to their materialistic tendencies. Nothing, not even a looming apocalypse, would keep Americans out of the department stores, especially at the peak of the holiday season. There was no interruption in sales; if anything, the doomsday rumours proved a ‘boom’ to the Christmas trade. A cartoon in the Chicago Tribune satirised this stubborn consumerism in a series of panels depicting citizens escaping various cataclysms by taking refuge in the nearest store and getting their Christmas shopping done early.

With the exception of the broken whistle in
Indianapolis and some reported suicides, it proved an uneventful day. The stock market remained static, the railroad and steel strikes unresolved and Congress deadlocked. For some, the continuation of life as usual may have been reassuring. The world had survived this final tribulation of 1919 and ‘come through in mighty good shape’. The only thing that had come to an end, one cartoon suggested, was the year itself – personified, as was conventional in year-end cartoons, as an old man. And there must have been relief in seeing Father Time consign that *annus horribilis* to history.

**Modern monotony**

Yet for those who had invested utopian hopes in the apocalypse, 17 December would have reaffirmed the monotony of modern life. ‘It was just a regular ordinary day’, lamented the *Detroit Free Press*, ‘and it’s up to all of us to go right ahead and pay our bills. That all-time moratorium was not declared.’ Philadelphia’s *Evening Public Ledger* was even more nihilistic: ‘And once more a deluded public settles down to the monotony of daily routine. Folks will have to get up in the cold and dark of tomorrow morning again. Folks will have to work. They’ll have to pay their income tax [and] worry now whether wartime prohibition’s unconstitutional or not ... Dr Albert F. Porta raised folks’ hopes. They believed in his story ... and the earth goes on its endless way, the public living only to look forward to another day when more planets will tumble along.

Porta carried on his work, issuing sunspot-based forecasts alone from his Institute of Planetary Science and writing letters defending his methods and reputation. But an editor’s prediction that ‘Professor Porta will sink into oblivion with the rest of his kind’ proved prescient and he died four years later, aged 70. Yet, by bringing amateur forecasts into disrepute, this forgotten figure ironically helped consolidate the authority of the US Weather Bureau.

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**Further reading**