

The Proctor-Parkes Incident: Politics, Protestants and Popular Astronomy in Australia in 1880*

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Henry Parkes' intervention to placate the Sabbatarian movement and prevent British astronomer Richard Proctor from delivering an astronomical lecture on Sunday 5 September 1880 created a major controversy in the Australian colonies. Controversy had been central to much of Proctor's success, and in this case drew on a long-standing connection between astronomy and religion. An examination of the Proctor-Parkes incident shows how popular science works in culture by drawing on and sustaining the analogical connections between scientific ideas and broader cultural concerns.

Shortly after 7pm on Sunday 5 September 1880 a large crowd milled about in Castlereagh Street, Sydney. They had come to hear the famous astronomer Richard Anthony Proctor speak about the relationship between science and religion. However, the lecture would not be given. Colonial Secretary Henry Parkes had intervened, using his powers to threaten the owner of the theatre and prevent this Sunday entertainment from proceeding. This was a remarkable win by the resurgent Sabbatarian movement in New South Wales, and a long-remembered controversy in Australian public life.¹

In 1880, Proctor was one of the most famous scientific popularizers in the English-speaking world.² From May to December of that year he undertook a triumphant tour of Australia and New Zealand. Skilfully managed by the impresario Robert Sparrow Smythe, Proctor delivered more than a hundred lectures to large audiences³ in most of the colonies, and gained attention in all of them. Controversy was very much a part of his success.

Proctor's tour, and the Proctor-Parkes incident in particular, had a high profile at the time and there were long memories of both.⁴ Despite this, they have been little studied. There is only one academic publication that directly addresses the dispute,⁵ while Proctor's tour does not appear in any of the major works on the history of Australian astronomy. Proctor's appearance in these histories is limited to his role in the controversy about Eta Argus,⁶ an event that will be discussed below.

The historical lacuna concerning Richard Proctor in Australia is notable. In recent decades scholarship has started to fill the gap between popular processes as an important part of the history of science and the cultural value of popular scientific discourse, from both directions. Richard Proctor is a well-studied figure in this regard. However, his Australian activities have received almost no attention. In general, the history of popular science in Australia remains understudied, with some notable exceptions.⁷ This essay provides an overdue study of the Proctor-Parkes incident and its historical context.

Examination of this incident reveals two aspects of the action of science communication within culture. The first of these is about the

nature of popular science. Scholars such as Hilgartner and Bucchi have described a continuum of popularization from intraspecialist to popular levels of communication.⁸ Consequently there is a range of motivations for such popularization, including persuasion, pedagogy and inspiration. Achieving success at multiple levels, as Proctor undoubtedly did, involves the use of content that is pertinent within the narrow contexts of specialization, but that is also able to create cultural meaning for that content in broader contexts by mobilizing and transforming its analogical connections.

The second aspect concerns popularization as an 'umbrella category'.⁹ Popular astronomy as practised by Proctor engaged a tradition that extended far back in time. Many of the analogical connections through which he infused his popularization with meaning comprised a distinctive set of concerns that had been associated with astronomy for centuries. I use the term *cultural schemata* to describe these clusterings of long-standing associations, capable of being recalled and thus able to influence interpretation and meaning-making.¹⁰ Different traditions of popularization, especially those associated with different forms of science, invoked very different cultural schemata, which in turn had consequences for the contexts in which, and the audiences for whom, they were practised. Much as we now understand science as a heterogeneous assemblage of practices, so too we should better appreciate 'popular science' in an analogous fashion.

The cultural schemata of popular astronomy were shared widely—indeed, there was a global network of trade in books, magazines and lantern slides that supported these popularizations—but these schemata also developed in particular ways in Australia. Astronomy was, indeed, a foundational science for colonialism, enabling the practices of navigation, surveying and public time. The use of objects of the southern sky as symbols of nationhood has been a persistent feature of Australian self-perception. The Southern Cross is well known in this respect; a lesser appreciated aspect is how strong interest in the comets seen first from the southern skies in the nineteenth century helped create an Australian identity.¹¹ The role of communicative technologies in the colonies like the magic lantern was highly significant to the development of an Australian colonial culture that was highly attuned to its position on the globe.¹² These technologies were eagerly embraced by Australians anxious to

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Table 1. Summary of Richard Proctor’s lecture schedule in Australia and New Zealand, 1880

	Life and Death of a World	The Sun	Other Worlds than Ours	The Moon	Comets and Meteoroids	The Star Depths	Birth and Growth of the Universe/ Vastness of God’s Universe
Melbourne	•	•	•	•	•	•	•
Geelong/Most regional Victoria	•	•					
Adelaide	•	•	•	•	•		•
Mt Gambier	•	•		•	•		
Sydney	•	•	•	•	•	•	x•
Maitland/Bathurst	•	•		•			
Newcastle	•	•	x				•
Hobart	•	•		•			
Dunedin/Christchurch	•	•		•		•	
Wellington	•	•		•	•	•	
Auckland	•	•	•	•	•	•	
Most other NZ	•	•		•			

• Lecture delivered

x Lecture scheduled but cancelled

retain a connection to ‘home’ while simultaneously reinforcing their distance from those remote locations. Popular astronomy was one factor in helping to sustain the global imaginary, or self-perception, of Australia as a European colony on the other side of the planet, and no individual in the late nineteenth century had more impact on astronomical popularization in Australia than Richard Proctor.

The Development of Proctor’s Australasian Tour

Proctor had several motivations for his tour of Australia and New Zealand. He had been struggling financially ever since the collapse of the New Zealand Banking Corporation in 1866 took what remained of his inheritance.¹³ In the post-goldrush era, Australians enjoyed the highest incomes in the world,¹⁴ and thus offered a lucrative market. Moreover, the Australian colonies at this time were especially populated with people likely to be a receptive audience. Nineteenth-century migrants to Australia were not ‘the poorest of the poor’,¹⁵ and there had been a significant influence from Chartist ideals,¹⁶ such as the expansion of the franchise, secret ballots and regular elections. Henry Parkes, himself, had once associated with Chartism.¹⁷ Both of these factors helped shape a society with a relatively healthy respect for knowledge and learning. Even more proximately, the death of Proctor’s wife Mary (née Mills) in 1879 led Proctor to seek distraction in work. A meeting in London between Proctor, Smythe and Frederick William Haddon, editor of the *Argus* (‘the voice of Victorian conservatism’¹⁸) sent the astronomer on a voyage intended to be both diverting and lucrative.

Despite the favourable conditions, the eventual popularity of Proctor’s tour was by no means certain. Platform lecturing did not have a strong tradition in Australia at the time. Smythe had previously managed the Reverend Charles Clark,¹⁹ the ‘pioneer’ of the ‘paying lecture platform in the Australian colonies’²⁰ famous for his recitations of Dickens, but few others. Smythe even refused to guarantee Proctor’s passage out, so unsure was he of the prospects. Yet Proctor earned around £5000, more than he had on his first tour of the USA and many times a government or university astronomer’s

annual salary.²¹ The *Thames Advertiser* reported a claim that Proctor cleared as much in Dunedin alone as he had in New York.²²

Proctor’s success was grounded in the cultural context of the times and in the skill of his manager, but also in his performance. He presented as a modern lecturer, deploying authority as a global expert, rather than as a ‘scientific and ingenious townsman’²³ of an earlier age. In his use of visual technology, too, he was up-to-date. In less skilful hands, the magic lantern could project ‘horrible vague images, often upside-down’,²⁴ but Proctor’s use was exemplary, including the latest photographs from the Melbourne Observatory and spectacular images such as those from James Nasmyth’s groundbreaking work *The Moon Considered as a Planet, a World and a Satellite*.²⁵ Above all, his lectures engaged contemporary issues in science, philosophy and religion.

Proctor in Australia had a repertoire of seven lectures. The first, and most commonly delivered, was ‘Life and Death of a World’, in which he outlined his framework of cosmic evolution with respect to the Earth and other planets. Most of his other lectures focused on the solar system or stellar objects. ‘Other Worlds than Ours’ gave his views on the subject with which he first had success—the possibility of life on other planets, known at the time as the ‘plurality of worlds’ debate. Proctor’s final lecture, ‘The Birth and Growth of the Universe’ described his view of the relations between science and religion, discussed nebular theory and reprised his framework of cosmic evolution. Proctor modified this last one into ‘The Vastness of God’s Universe’ in Australia after the Parkes incident. Despite claiming that his success in New Zealand was largely due to the Parkes controversy, he did not deliver his seventh lecture there. Only Melbourne and Sydney audiences heard and saw all seven. Table 1 and Fig. 1 summarize Proctor’s lecturing schedule in Australia and New Zealand as gleaned from contemporary newspaper reports and advertisements.

Proctor’s Reputation Built through Controversy

It is not surprising that the role of controversy was paramount in the success of Proctor’s Australasian tour; even Australian critics of

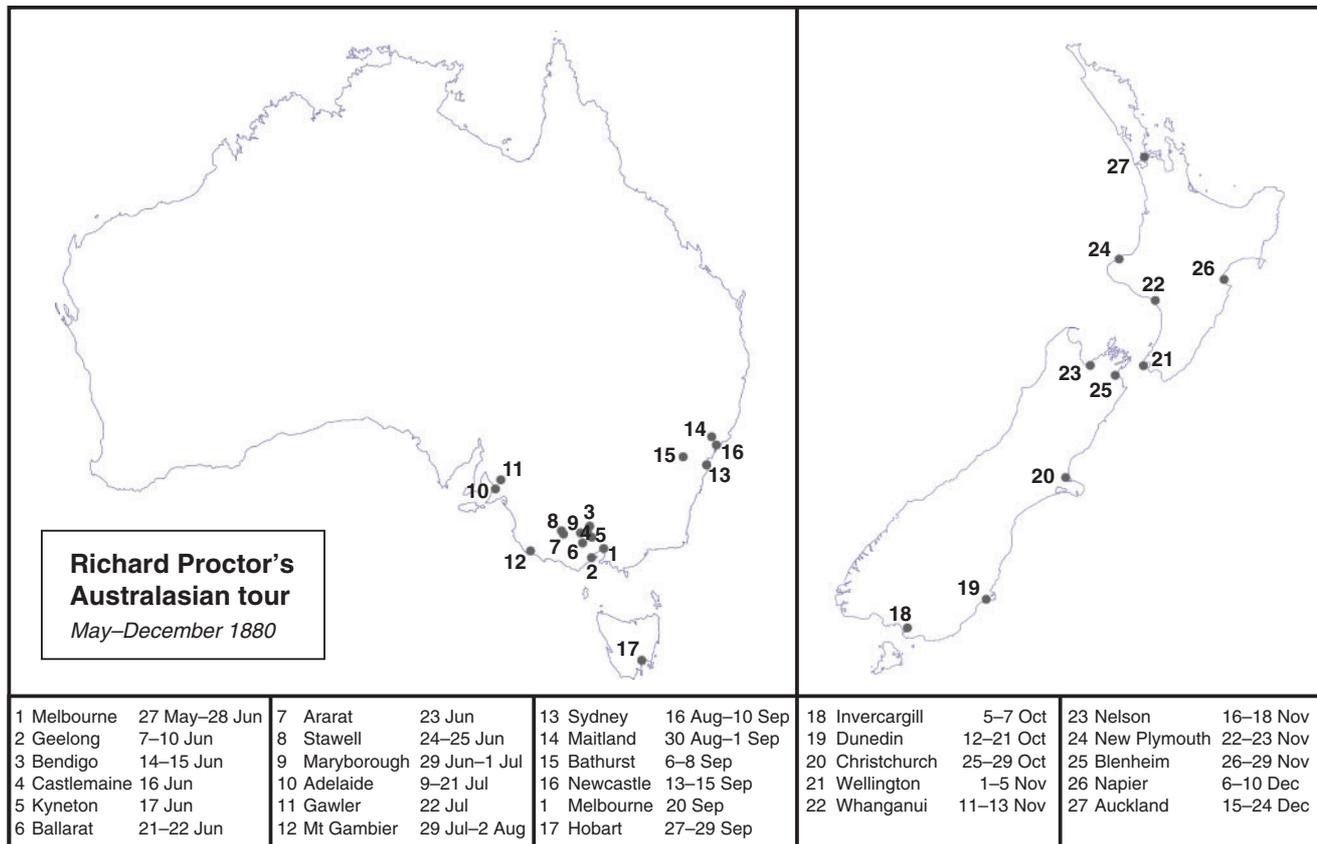


Figure 1. Map of Richard Proctor's tour of Australia and New Zealand from May to December 1880.

Proctor's sensationalism acknowledged its value.²⁶ Indeed, he had largely been brought to the attention of the Australian public through public disputes in the 1870s. The most significant of these will be described here.

Proctor's Early Disputes about the Organization of Science

Proctor's first brush with controversy came with his 1870 book *Other Worlds Than Ours*. This work, on the plurality of worlds, was Proctor's breakthrough success, but it also brought into public view Proctor's dispute with Norman Lockyer over the nature of the Sun's corona.²⁷ Lockyer considered the phenomenon to be partly caused by refraction in the Earth's atmosphere; Proctor believed it to be purely solar in origin.

The antagonism between the two men developed over the question of the organization of research expeditions to observe solar eclipses and the transit of Venus. Proctor grew increasingly frustrated with the management of these expeditions by Astronomer Royal, George Airy, a close confidant of Lockyer's. Proctor thought that Airy's arrangements would not provide answers to the scientific questions at stake, such as the tests suggested by Proctor to help resolve the question of the corona. When Proctor, as secretary of the Royal Astronomical Society, published a critique of Airy it was too much. Proctor was forced to resign.²⁸ Proctor had come to feel that government support for scientific research, while admirable in principle, inevitably led to corruption in practice; he believed that

scientists should be more entrepreneurial and be able to live off their public writing as he, and a few other scientists like Huxley could do.²⁹

Proctor's writing was certainly prolific. He reworked his writing many times, publishing similar columns in multiple newspapers, and then republishing them in books, but he also wrote new material incessantly. Proctor's manager in the USA, Charles Carter reported him writing for an hour or more at night:

during the tour Proctor would often seclude himself for an hour and a half before dinner and come down from his room fresh and smiling with—'Well, Carter, I've earned fifty dollars—here's another article'.³⁰

Much of his output was reprinted in Australian newspapers. He was a particular favourite of the *Australasian*, a weekly version of the Melbourne *Argus*. One subject that these papers—and many others—reported on was Proctor's speculations about comets.

Courting Interest in the Apocalyptic Potential of Comets

In 1876, a 'new star' (now known as Q Cygni)³¹ was detected in the constellation of Cygnus. It flared up suddenly and then faded over the course of the next few weeks. This observation was interesting enough—variable stars and novae were a puzzle for astronomy at the time. The attention given to the discovery in the Australian papers, however, was completely eclipsed by Proctor's commentary on it.

Proctor's, 'Suns in Flames', originally appeared in March 1877 in the London magazine *Belgravia*, and was summarized in the Australian papers within months. In his article, Proctor wrote that a cometary impact with the sun could destroy all life on Earth. Given both the spectacular nature of this claim, and the widespread Australian interest in comets in the nineteenth century, it is no surprise that the article was noticed.

Proctor's commentary began with an assessment of the catastrophic effects on Earth should the Sun experience a similar burst of activity: 'the creatures on the side of the earth turned towards him at the time would be destroyed in an instant'. Nor would those on the night side be spared. 'In much briefer space the effect of his new fires would be felt all over the earth's surface. The heavens would be dissolved and the elements would melt with fervent heat'.³²

Proctor speculated about a possible cause for such outbursts—meteoritic impacts associated with the passage of a large comet. Although he would conclude that such a catastrophe was 'exceedingly unlikely' the rhetorical impact had been made: Proctor said that a meteor colliding with the Sun could extinguish life on Earth. This message was indeed inferred by many, such as the *Scientific American* that picked up Proctor's theory and included it in a list of ten possible 'fates' for the 'last man' on Earth.³³

Like the *Belgravia* commentary, the *Scientific American* article was reported in Australia.³⁴ A telling indicator of the impact of this theory was its use in jocular asides, such as when the *Queenslander* reported during a brief heatwave that 'everybody was disposed to believe that Mr Proctor's theory anent a momentary increase of solar heat, by that much-abused comet, might be coming true'.³⁵

Proctor's Prior Australian Controversies

Proctor's apocalyptic speculations were noted across the world, but he was particularly noticed in Australia for the local disputes in which he was involved. One of these took place between the Tasmanian amateur astronomer Francis Abbott and British astronomers John Herschel and George Airy over the appearance of the nebula Eta Argus (now known as Eta Carinae). The physical nature of nebulae was one of the biggest questions in nineteenth-century astronomy, and Eta Argus was one of the most interesting. It was also inaccessible to northern telescopes making its study of particular significance to southern hemisphere astronomy.

Abbott came to believe that the nebula had changed considerably in appearance since first being drawn by John Herschel at the Cape of Good Hope in 1838. Things came to a head in 1868 when Abbott produced not just a report, but also a drawing of his observations.³⁶ These were scrutinised by Herschel himself who published a condescending response suggesting Abbott had misinterpreted observations.³⁷ Richard Proctor picked up on this dispute and published an article in *Fraser's Magazine*, taking Herschel's side.³⁸ Abbott appealed directly to Proctor for an opinion in 1871 but Proctor backed the judgement of Herschel even more strongly: Abbott was an incompetent observer.³⁹ When Airy provided a third opinion that was scathing of the quality of Abbott's drawings, Abbott's reputation in Europe was shredded. This incident was a clear assertion of the authority of professional astronomers over amateurs, and despite his growing unease with the value of government-funding, Proctor nonetheless leant his growing popular status to side fully with professional astronomers against amateurs.

Proctor was drawn into another local controversy in 1870—for once unwittingly. The amateur astronomer (and popular science lecturer) Henry Severn waged a campaign against the design of the Great Melbourne Telescope and the competence of its astronomer Albert Le Sueur, initially through letters to the *Argus* and culminating in a scathing paper read at a meeting of the Royal Society of Victoria.⁴⁰ One of the pieces of evidence Severn tendered was Proctor's opinion of the merits of reflector telescopes like the Great Melbourne Telescope. Proctor's name would be invoked more than once as Severn, and Le Sueur and Robert Ellery (on behalf of the Observatory), traded barbs through the press. Although not directly involved, this incident helped keep Proctor's name in the minds of the Australian public, and associated with controversy.

A more minor dispute occurred on the eve of the tour itself. It was reported that New South Wales Government Astronomer, Henry Chamberlain Russell, supported an assistant's claim to have observed the shadow of a comet on the Moon. Proctor said that such a notion was ridiculous; the observation was a natural shading on the surface. Several Australians in London took offence on Russell's behalf and claimed that he had been misunderstood. Russell himself wrote to the *Observatory* to complain about Proctor's article.⁴¹ By the time Proctor arrived in New South Wales both parties seemed concerned to avoid any ill-feeling, in public at least. Proctor praised Russell's work, both in the press and in his lectures⁴² while for his part Russell was polite about Proctor's 'careful study' of Jupiter, even while disagreeing with his interpretation.⁴³

Proctor Sustains his Celebrity on Tour through Controversy

Proctor's tour of Australia and New Zealand started with a small public controversy. Finding it unexpectedly difficult engage a lanternist cheaply in Melbourne, Proctor borrowed a lantern from Robert Ellery of the Melbourne Observatory at short notice just before his second lecture. In the rush to set it up the two gas tubes—oxygen and hydrogen—were accidentally swapped.⁴⁴ Illumination for this lantern was by limelight, produced by directing a hot flame against a piece of limestone. The flame was produced by burning hydrogen and in this combustion, two volumes of hydrogen mix with one volume of oxygen. The mistaken connection resulted in too much oxygen being used, and the supply being drained. On the second night the images dimmed; on the third the gas ran out entirely, and several illustrations had to be omitted. This was more than a mere inconvenience. Visual communication was central to Proctor's popularization. One omitted illustration was a chart of the surface of Mars, a particular area of Proctor's scientific expertise, important both to his personal claims for authority and to advance his thesis of cosmic evolution.⁴⁵ Fig. 2 shows an illustration of Proctor lecturing at the Melbourne Athenaeum, including an image of the lantern borrowed from the Observatory.

Proctor attempted to deflect attention from the failure of the lantern equipment but in doing so complained about the competence of Melbourne lanternists.⁴⁶ One local optician, Wood, took offence at this slur and a brief exchange of letters appeared in the *Argus*.⁴⁷ Proctor and Smythe quickly called on Wood and the matter was smoothed over. Although trivial in itself, this dispute revealed a pattern that would be seen more than once over the course of the

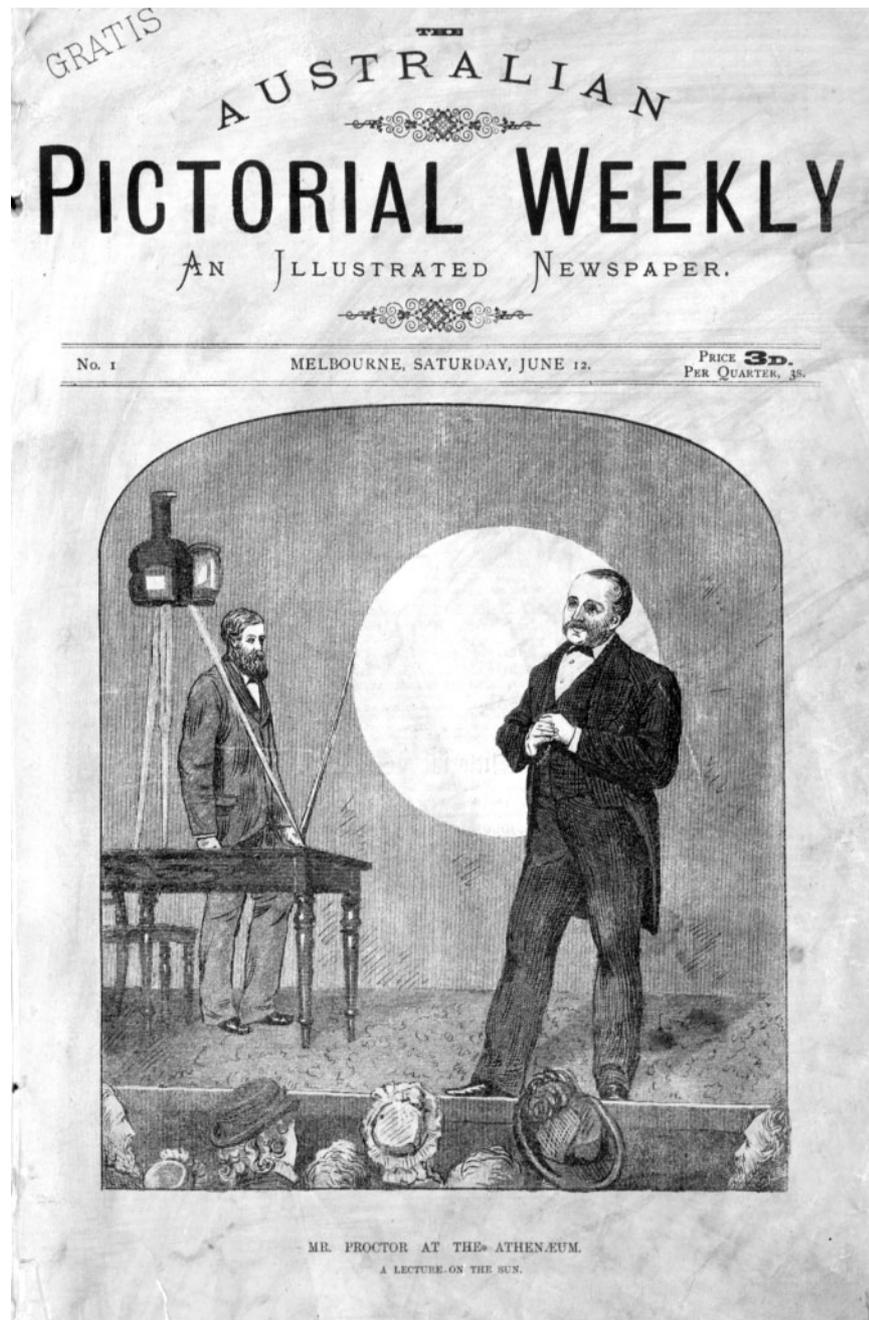


Figure 2. The front cover of the first edition of the *Australian Pictorial Weekly*, 12 June 1880, showing Richard Proctor lecturing at the Melbourne Athenaeum, including the magic lantern borrowed from the Melbourne Observatory.

tour. Proctor, sensitive to slights on his professionalism, was quick to respond condescendingly, but equally quick to use diplomacy in an effort to resolve matters. Later disputes, however, would not prove as tractable.

Proctor soon built on his notoriety in regards to speculations about comets. He penned an article for the *Victorian Review* that referred to the comet observed in Australia earlier that year, and incorporated the new material into his lecture on comets and

meteors.⁴⁸ Although scepticism about his theories was registered in letters to the editor, a widespread appreciation of their catastrophism was clear.⁴⁹

Proctor's Views about Science and Religion

The most controversial aspects of Proctor's lectures in Australia, however, concerned the relationship between science and religion.

Proctor was an advocate for the autonomy of professional science—from amateur involvement, from state support, and from religious interference.

Proctor's own religious opinions were complex. Initially an orthodox Anglican, Proctor commenced his university studies in theology, intending to enter the ministry. He converted to Catholicism upon marrying Mary Mills, but publicly renounced this new faith after her death. Proctor became increasingly anti-clerical and sympathetic to free thought, yet declared himself an agnostic.⁵⁰ While he clearly disagreed with the idea of a personal god, Proctor would pen a series on 'The Religion of Science' for his journal *Knowledge* in which he would 'show how to the student of the universe thoughts essentially religious present themselves'.⁵¹ Lightman draws attention to the influence of the philosopher, Herbert Spencer, on these views.⁵² Many of Proctor's religious comments were reported in Australia before his tour.⁵³

Despite this foreknowledge, Australia's religious communities were not initially hostile to Proctor's tour but rather 'clergy of all denominations from the Bishop of Melbourne downwards, recommended their congregations to go and hear the eminent lecturer'.⁵⁴ The Reverend James Jefferis, Congregationalist minister in Sydney and Proctor's later disputant, first mentioned Proctor in a sermon delivered in Adelaide at the opening of the Congregationalist Church at College Park.⁵⁵ Jefferis had heard Proctor speak about 'The Moon—Our Companion Planet' at the Melbourne Athenaeum on the 8 June and his tone was generally positive.

However, religious disquiet with Proctor's lectures grew throughout the tour. The reason for this lay in the content of Proctor's lectures.

Religious Implications of the Themes in Proctor's Popular Astronomy

The Theme of the History of Astronomy

Proctor would start his primary lecture, 'Life and Death of a World', with an invocation of the history of astronomy:

From time to time we learn that the great astronomers Copernicus, Galileo and Newton first discovered and established the true law of the solar system, and it was only after that discovery that men began to recognise the vastness and immensity of the scale on which the universe is built.⁵⁶

In fact, the start of every one of Proctor's lectures included a reference to historical astronomy, whether to earlier superstitions in 'Comets and Meteors' or a description of the Mesopotamian origin of constellations in 'The Star Depths'.

This focus on history was not unique to Proctor. More than in most popular sciences, astronomy often deploys its own history. One of the most frequently invoked themes was of astronomy as an exemplary science—the one that had discovered 'the true law of the solar system'. By the nineteenth century, astronomy was regarded as a mature branch of science, and it would usually be the first science treated in compendia. For many, a history of astronomy stood for a history of science, or indeed of thought itself.⁵⁷ This cultural position was clearly significant with regard to religious controversies. It is no coincidence that both theology and astronomy were described as 'The Queen of the Sciences'.⁵⁸

The Theme of the Astronomical Sublime

Another way that Proctor's popularization intersected with religious sensibility was his appeal to the sublime in describing the 'the vastness and immensity of the scale on which the universe is built'. Again, this association was not unique to Proctor. The connection between a sense of the sublime and astronomy had already been much noted by Proctor's time. According to Joseph Priestley, astronomy was one of 'the noblest fields of the sublime that the mind of man was ever introduced to'.⁵⁹

The origin of the appeals to the sublime in astronomy were various. Some lecturers spoke of the grandeur of the mechanics coordinating the motions of the heavens. For others, it was an appreciation of the sheer geometrical vastness of the universe, and hence smallness of Earth. Proctor emphasized the destructive powers of astronomical forces, as will be detailed in the next section. All of these had implications for the relationship between astronomy and religious thought.

The Theme of Cosmic Evolution

One of Proctor's particular interests in appealing to the sublime was to promote an overarching framework in his lectures, the idea of cosmic evolution. According to Proctor:

The cycles of change affecting the universe must be vast, and although the gradual changes amongst the earth's solar system, and even in the other planets and the stars, are so very slow and so minute that they are almost imperceptible in a man's life time, yet it cannot but be acknowledged that changes have taken place, are now taking place, and will continue to take place. As a proof we have other globes like the earth we live in, which must have gone through the same processes, the gradual process of change that under our very eyes are taking place on this earth and have now reached a stage of life—a stage in a planet's life utterly unfit for the sustenance of animal life.⁶⁰

This passage summarizes Proctor's theory that the universe, and all objects within it undergo a process of change; different planets age at different rates; and the suitability of a planet for life depends on its position within its life-cycle. More metaphorically, Proctor would continue by explaining that worlds run their course 'through burning childhood, fiery youth, manhood, old age and decrepitude, to the final stage—that of death'.⁶¹

Proctor would explicitly posit the Moon, 'a planet in a more advanced stage, in that of decay and decrepitude', as a picture of the Earth's bleak future before concluding his lecture with a climactic appeal to the sublime:

There are more than a hundred million stars visible through a single telescope, and each star is the centre of a solar system: supposing that life exists on one planet in each system it must exist in a hundred millions of worlds. There must be hundreds of millions of worlds in all the stages of preparation, some emerging into life, others declining to decay and death. Life there has been for the infinite past, there will be life for the infinite future.⁶²

Audience Responses to Proctor's Themes

The clear framework of cosmic evolution that Proctor presented to audiences undoubtedly increased the memorability of his lectures. Certainly his audiences were receptive to the theme.⁶³

Two aspects of Proctor's cosmic evolution were seen as being theologically problematic. First, his future for the Earth as a cold, dead,

world went against the orthodox Christian vision of a future paradise under the Second Coming of Christ, at least in a literal interpretation of the *Bible*. Second, the idea of a multiplicity of inhabited worlds was difficult to reconcile with the notion that Christ's redemption was singular, and thus that there could be only one world of men.⁶⁴ It was for this latter reason, Golinski suggests, that astronomers like Proctor deployed the concept of the astronomical sublime in order to protect speculations about life on other planets being regarded as theological heterodoxy.⁶⁵

Correspondents to Australian newspapers picked up on both of these theological concerns and some felt that Proctor's lectures were 'highly injurious to divine revelation and the Christian faith'.⁶⁶ Proctor occasionally replied to such criticism, but asserted that his lectures were 'not intended either for the uneducated or the feeble-minded'⁶⁷—a comment that was hardly likely to conciliate. Nor was saying that:

only folly little short of idiocy can cause any decently educated person to regard the vastness of the universe, its immense duration in time, and the perfection of the laws which have fashioned its various parts, as reasons for abandoning belief in an omnipresent ever existing Being.⁶⁸

The theological questions came to a head in Sydney. Back in front of his own congregation, James Jefferis selected 'The Highest Teachings of Astronomy' as the subject for his sermon on Sunday 29 August. This was brought to Proctor's attention, and he introduced his lecture on the day before with a brief discussion of the relationship between science and religion as he saw it. Proctor reprised his views: that science and true religion must be compatible; that God's nature and thoughts were unknowable; and that the incomprehensible vastness of time and space revealed by astronomy stood as a lesson for this. But although Proctor stressed the general consistency of science and theology, he nonetheless addressed some pointed comments towards religions in particular claiming,

scientific teachings were chiefly valuable ... because they indicated the universal prevalence of law, and consequently the futility of lawlessness, no matter under what high or even sacred names disguised.⁶⁹

Proctor also used this occasion to announce that he would deliver his final lecture, on 'The Birth and Growth of the Universe', on a Sunday, 5 September.

Jefferis delivered his sermon as advertised, and for good measure followed it up with a letter to the *Sydney Morning Herald* the following week. This time there was no holding back. According to Jefferis, Proctor was 'not very careful in his dealings with theology'.⁷⁰ Proctor replied archly with a letter that not only showed that he was familiar with the texts in question but that drew attention to his own theological training.⁷¹ A second, more conciliatory, letter from Jefferis appeared, apologizing for relying on reports in the press—he had not actually been present at Proctor's lecture—and attempting to reconcile the differences between the astronomer and himself.

Proctor's Sunday Lecture is Cancelled

Although Jefferis and Proctor seemed to resolve their theological argument, it proved to be only a prelude to a larger drama. Proctor's announcement of a Sunday lecture—at a theatre where freethinkers were accustomed to lecturing on that day—offended

Christians of a Sabbatarian inclination (those who wished to restrict commercial activity on Sundays, many of whom would go on to re-form the Lord's Day Observance Society in the wake of Proctor's tour). Notable Protestant clergy, such as Presbyterian minister John McGibbon, lobbied the Premier of New South Wales, Sir Henry Parkes, in person, and others wrote letters to the editors of newspapers.⁷²

Parkes decided to act. On Thursday 2 September, he instructed the Inspector-General of police, Edmund Fosbery, to prevent the lecture from taking place in the terms advertised. Fosbery called on Smythe and told him that the lecture was illegal and should be cancelled. Smythe immediately wrote to Parkes pointing out that no money would be taken at the door for Proctor's lecture, and that exactly the same arrangement had prevailed in London for many years without complaint. This was, in fact, not entirely true. Sunday lecturing was still somewhat controversial in London in 1880, and there had been successful prosecutions against such lectures little more than a decade earlier. The relevant law was not repealed until 1896.⁷³ Proctor was actually reprising a campaign he had supported in England, rather than transferring a well-established practice to New South Wales.

In any case, Parkes stood firm. On Friday he reiterated his stance and Smythe seemed to capitulate, saying no further Sunday lectures would be given but also arguing that it was impossible to return the tickets already sold, and since they were convinced it was lawful, the lecture would be given. On the Saturday evening Inspector-General Fosbery visited the owner of the theatre, Samuel Lazar and informed him that Parkes would revoke his theatrical licence if the lecture were given. Lazar had a long meeting with Proctor and Smythe on Sunday and they confirmed their intention to proceed. Fosbery returned once more, repeated his threat, and a little more than two hours before the start of the lecture, Lazar wrote a pleading note to Proctor asking him to call it off.⁷⁴

Details of what happened next are readily available from newspaper reports.⁷⁵ Crowds started forming from 7pm and soon more than 2000 people assembled in front of the Theatre Royal. Specially provided ferries and trains had brought some of them across the harbour or in from the suburbs—the commercial arm of the government, at least was, supporting the lecture. Around 7:45pm, when word had spread that the lecture was not going to be given, Proctor appeared on the balcony of the Oxford Hotel next door and addressed the crowd:

I shall ask you, as soon as you possibly can, to disperse. In this matter I have acted, not from any consideration of my own interests, but because I was assured by the lessee of the Theatre Royal that his license would have been revoked by the Colonial Secretary—(groans)—who has the power to do so. (Cries of 'Shame'.) I need hardly tell you that, so far as my own risk was concerned, I was prepared to have run that risk. (Cheers.) I am a law-abiding citizen, and I obeyed the law. With the loss of the Theatre Royal it was a question of ruin; with me it was a question of a few hundred pounds. In this matter I have only yielded at the last moment to what is, practically, police interference. (A Voice: 'Try again next Sunday'.) I appeal to you, as good and loyal citizens, to retire to your several homes as quickly as possible. One thing we may do before we retire, and that is to give three cheers for law and order, and three cheers for the Queen.⁷⁶

A major public controversy erupted, and Sabbatarians were delighted. Liberal-minded Australians, including most (although

not all) of the press, condemned Parkes' actions as those of a bully.⁷⁷ Prominent Protestant clergy, however, lined up to congratulate him,⁷⁸ although they were quick to point out that they had no argument with the facts of astronomy.⁷⁹ A Unitarian minister, McDonnell, offered his church for Proctor to speak at on Sunday in the wake of the incident,⁸⁰ and undoubtedly there were other liberal ministers who wholeheartedly supported Proctor's vision of compatibility between science and religion, but none of that was expressed in public. The Catholic *Freeman's Journal*—never very fond of the Sabbatarian movement, but very fond of haranguing Parkes—was critical of the decision, although it would seem to have been more through a desire to attack the Colonial Secretary than to defend Proctor.⁸¹ According to the *Jewish Herald*, 'Judaism alone stood quietly by, and said nothing, because it had no cause to fear any danger from the revelations of science'.⁸² Proctor did manage to offend Australian Jews by the end of the year, however, when he wrote an article in *New Zealand* suggesting astronomical connections between Jewish rituals and sun-worship. Afterwards, the *Jewish Herald* declared that his opinions in this matter should be taken '*cum grano salis*'.⁸³

The Sabbatarian movement was on the rise in the Australian colonies but with mixed success. The government of New South Wales had never previously made public concessions to the cause. Not only did trains and ferries always run on Sundays, but the government insisted that licensed ticket sellers remain open on the Lord's Day, not just its own employees.⁸⁴ In other colonies Sabbatarians were more successful—museums and railways were closed on Sundays at various times in South Australia and Victoria.⁸⁵

One of the most notable successes of Victorian Sabbatarians also involved interfering with the Sunday lectures of another scientist—John Henry 'the Professor' Pepper.

Professor Pepper's Sunday Lectures

Pepper, like Proctor, was a prominent British popularizer of science down on his luck and trying a tour of the colonies. Although it started well, Pepper's 'science festivals' (in the year before Proctor's tour), were much less successful. Initially lecturing to full houses, by the end of a six-week run at the St George's Hall in Melbourne, audience numbers started to drop away. Pepper's audience numbers also dwindled in Sydney, leading to changes in his routine, including a greater emphasis on a 'Ghost' routine, made famous at the London Polytechnic, wherein an offstage projector would cast a picture onto an angled sheet of glass, giving the appearance of a image suspended in space.

Pepper started a second season in Melbourne after touring through country New South Wales, Tasmania and country Victoria. It was even less successful than his first. By June 1880, after Proctor swept through Melbourne, Pepper offered his services to the education department. In August, Pepper took his operation to Adelaide, just weeks after Proctor appeared. Although he met initial success, the tour collapsed in South Australia under financial and personal strains, which included Pepper being taken to court for non-fulfilment of contract.⁸⁶ In the aftermath, Pepper sold his equipment and moved to Brisbane where he took a position as Government Analyst, retaining his sideline of schools lecturing.⁸⁷

One of the changes Pepper made to his repertoire in Sydney was the inclusion of astronomy. Around this time he also started

using a set of commercially produced astronomy slides. In addition to working astronomical content into his 'science festivals', Pepper also delivered lectures with a purely astronomical theme. Notably on two Sundays, 30 November and 7 December 1879, Pepper presented 'secular sermons' at the Victoria Theatre.⁸⁸ Moreover, these were presented on exactly the same commercial basis that would prove so objectionable to Sabbatarians just nine months later: tickets pre-sold, with advertised prices. There was no campaign against—even much notice of—Pepper's Sunday lecturing in Sydney. Pepper had had no background of conflict with religious authorities and his theology was more orthodox. Nor did he appear at a venue known as being a home of free thought.

Melbourne Sabbatarians were more vigilant; when Pepper started giving Sunday lectures on astronomy on his return they were noticed.⁸⁹ On Sunday 23 May 1880, in preparation for his sixth Sunday lecture, the police paid Pepper a visit: he was acting illegally by taking money at the door on Sundays and would be prosecuted if he continued to do so. The arrangements were quickly changed; tickets were not sold and instead a collection was taken,⁹⁰ but Pepper soon abandoned Sunday lectures altogether. Sabbatarian lobbyists in Sydney noted this success later in the year, although overlooked their own inattention some nine months earlier. In contrast with the Proctor-Parkes incident, the press paid little attention to the interference with Pepper's lecturing.

The Proctor-Parkes dispute not only received significant public attention at the time, but it would also be long remembered within religious and free thought communities. In 1884, a Sabbatarian deputy to then Premier Alexander Stuart urged him to emulate Parkes and close all theatres to secular lecturers on Sundays.⁹¹ In 1887, after Parkes returned to the Premiership and followed through on the closures, liberals, freethinkers and trades-unionists formed a delegation asking him to reverse his decision. Again, the Proctor case served as a cultural touchstone.⁹² By 1890, after Proctor's death, free thought lecturers like William Whitehouse Collins explicitly claimed Proctor as one 'of their advocates'.⁹³ The *Protestant Standard* disputed this description, although the year before they had been happy, at least, to claim Proctor as an anti-Catholic.⁹⁴ Richard Proctor himself was still being referred to as 'a fascinating lecturer' in 1922.⁹⁵

Comparing the Reaction to Proctor and Pepper

A comparison between the reactions to Pepper and the later Proctor-Parkes dispute raises several questions. Why was Proctor's lecture a much bigger target for Sabbatarians than Pepper's? And why was astronomy considered a suitable subject for Sunday lectures in the first place? Moreover, the answers to both of these questions confirm that engagement with cultural schemata is characteristic of successful popularization, and also that the cultural schemata of popular astronomy are distinctive from the traditions associated with the popularization of other sciences.

Proctor's Australian lectures deliberately engaged issues and ideas like Sunday lecturing, evolution and cometary destruction. These cultural tropes were drawn from multiple timescales; free thought was a recent phenomenon, while the astronomical sublime was a long-standing cultural schema. Proctor was able to be simultaneously modern, yet engaging with the weight of tradition. The clear framework in which he presented his material meant that audiences

could readily negotiate complex material in a simple fashion. Pepper, on the other hand, presented more as an old-fashioned entertainer. His ‘science festival’ style had once been successful, but by 1880 was losing its appeal.⁹⁶ His impact was reduced and he had trouble drawing repeat audiences.

However, there were also clear similarities between Proctor and Pepper. Pepper was less adept at deploying the cultural schemata, but his astronomical lectures invoked many of the same themes as Proctor, just as earlier astronomy popularizers had done, and subsequent ones would do. These schemata have been outlined above: the sense of the astronomical sublime, astronomy as an exemplary science, and the persistent association with the science of the night sky and religious thought.

This set of cultural schemata is clearly unique to astronomy, although individual aspects of them can be seen in other traditions. For example mathematics was also called ‘Queen of Sciences’,⁹⁷ but was not associated with the same sense of the sublime. Almost by definition, only astronomy studies the universe at such a large spatial scale.

These schemata were long-standing; Proctor was certainly not the first to deploy the connections between astronomy and religion. The ‘plurality of words’ debate had an acknowledged theological significance for centuries. Astronomy was also invoked regularly in nineteenth-century debates over Darwinism, as much due to its cultural status than in terms of precise facts, which were much more rarely cited. Proctor mobilized a well-developed tradition, and his treatment was able to focus the attention of both friends and opponents on his views about religion.

The considerable success of Richard Proctor was due to his ability to speak authoritatively to the details of astronomical science while linking them with broader cultural meanings that were understood by, and important to, his audiences. The cultural schemata of astronomy operated by enmeshing the knowledge practices of specialist researchers with the lived experiences of non-specialist publics.

These understandings combined in many ways and the skies above Australia held different powerful meanings for diverse groups of people. The stars over Castlereagh Street in September 1880 were infused with the ideals of freedom, progress, duty, in a way that would not be soon forgotten.

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