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Framing the transit: expeditionary culture and identities in Lieutenant E.J.W. Noble's caricatures of the 1874 transit of Venus expedition to Honolulu

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Abstract:

Making use of a source previously unknown to historians, this article sheds new light on the British expedition to the Sandwich Islands to observe the 1874 transit of Venus. This source, a series of caricature drawings that follow the expedition from departure to return, gives insight into expeditionary culture and the experience of a previously unremarked member of this astronomical expedition, Evelyn J.W. Noble, a career officer of the Royal Marine Artillery. They also reveal overlapping military, scientific and masculine identities, developed in dialogue with, and often deliberately subverting, more public accounts. The article explores this unique source as a product of naval, imperial and expeditionary cultures; as a contribution to the wide textual and visual culture that surrounded the transit expeditions; and as a series of drawings that united the expedition members through the use of humour and irony, by differentiating the group from others they encountered, and by reflecting or rejecting ideas about the nature of scientific work and personae. The artist represented himself not as a serving officer but as part of a (mostly) united group, dedicated to but humorously self-deprecating about their contribution to the scientific effort.

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When, braving sub-tropical malaria,
 And noses and fingers that freeze,
 From Kerguelen to dismal Siberia
 Astronomers sail o'er the seas,
 Fair Venus, our beautiful neighbour,
 Throws down her distinguishing light,
 'Twixt the armies for Science who labour,
 And the armies for conquest who fight.¹

1. Introduction

This verse was published in *Punch* just after the transit of Venus of 8/9 December 1874. It illustrates, even as it gently mocks, the heroic, masculine and imperial mode in which the expeditions dispatched to observe this phenomenon were discussed in the British press. It celebrates the work of astronomers over army campaigns, for both might be assumed to achieve the same result – the demonstration and further enhancement of Britain's global position. How much better that this should be led by the “armies of Science”, focused on Venus, instead of the “armies of conquest”, symbolised by Mars. Yet this ode to “astronomers” overlooks the fact that a majority of the official observers on the British expeditions were naval or army officers. Historians have long pointed out the close involvement of the military in these and other expeditions but the experiences of officers, particularly more junior ones, are often hard to capture and frequently overlooked. Making use of an unusual, previously unknown and recently digitised source, this paper explores the perspective of one such officer, Lieutenant Evelyn James Wheelock Noble (1849-1896).² It will argue that, at least for the duration of the expedition, he presented himself as one of the astronomers, embodying the peaceful spread of British civilisation rather than armed might. In doing this he played a part that the press had

I would like to thank those who have read and heard earlier versions of this paper and made insightful and helpful comments, including Jim Secord, Simon Werrett, Sophie Forgan, Greg Radick, Omar Nasim and Charlotte Sleigh. I am very grateful, too, for the comments of the two anonymous referees, which have helped to improve the paper.

¹ From ‘The Transit of Venus’, *Punch* 67 (19 December 1874), p. 256.

² Two albums of caricature drawings, titled ‘The Life & Adventures of Station B’, by E.J.W. Noble, belong to the descendants of George Lyon Tupman, leader of the expedition. They have been digitised as part of Cambridge Digital Library's Transit of Venus Collection, alongside related material from the family archive and the Royal Greenwich Observatory Archive in Cambridge University Library: <https://cudl.lib.cam.ac.uk/collections/tov> (accessed 4 May 2017).

defined for him but, by treating these identities humorously, he also played a role in developing cohesion within his expeditionary party.

The caricatures enhance and extend what has been written about the transit of Venus expeditions of the eighteenth and nineteenth centuries.³ These involved observers being sent to widely separated locations in order to create a baseline for a measurement of the Sun's parallax. From this measurement the distance between the Earth and Sun could be calculated, providing a means of establishing real rather than relative distances and masses in the Solar System. This was considered a "noble" problem of scientific interest, although it was also hoped that it would improve the accuracy of astronomical and navigational tables. In addition, the expeditions provided the opportunity visit and carry out survey work in areas of scientific, imperial and military interest. Probably the best documented of the nineteenth-century expeditions is that to the Sandwich Islands.⁴ The largest of five official British expeditions for 1874, 'Station B' was led by George Lyon Tupman, a captain in the Royal Marine Artillery. He was paid as chief organiser of all five expeditions from 1872 and, afterwards, to reduce the observations until March 1878, working a further two years voluntarily, "*con amore*", by which time he had been made Major and retired.⁵ According to George Forbes, a professor at Anderson College in Glasgow and one of the Sandwich Island observers, he was "head of the entire enterprise, and is responsible through the Astronomer Royal to the Government for every part. Every observer is responsible to Capt. Tupman."⁶ Led by an army officer, the expeditions were planned, trained for and executed like a military exercise.

³ The chief studies of the eighteenth- and nineteenth-century transits are Harry Woolf, *The Transits of Venus: A Study of Eighteenth-Century Science* (Princeton: Princeton University Press, 1959) and Jessica Ratcliff, *The Transit of Venus Enterprise in Victorian Britain* (London: Pickering & Chatto, 2008). There are many popular accounts of the more heroic and convoluted eighteenth-century expeditions, e.g. Andrea Wulf, *Chasing Venus: The Race to Measure the Heavens* (London: William Heinemann, 2012), and it is an essential part of accounts of James Cook's circumnavigations.

⁴ Michael E. Chauvin, *Hōkūloa: The British 1874 Transit of Venus Expedition to Hawai'i* (Honolulu: Bishop Museum Press, 200) and 'Astronomy in the Sandwich Islands: The 1874 Transit of Venus', *Hawaiian Journal of History*, 27 (1993), 185–225; J. Ratcliff (note 3), pp. 108-10.

⁵ A.C.D.C. [Andrew Claude de la Cherois Crommelin], 'George Lyon Tupman', *Monthly Notices of the Royal Astronomical Society* 83 (1923), 247-8, p. 248.

⁶ George Forbes, *The Transit of Venus* (London: Macmillan, 1874), p. 96.

Given his central role, Tupman has earned his place in the literature. Officers who were not expedition leaders rarely feature: their names are recorded in association with their observations and reports, but they are barely present as individuals either within contemporary press reports or the historiography. Chauvin, clearly more interested in the scientific credentials of an observer like Forbes and finding the official archive unilluminating, wrote of the “soldierly near-anonymity” of Lieutenants Noble and Ramsden.⁷ This is unsurprising, for most of the transit of Venus officers went back to military careers and, from the point of view of history of science, obscurity. From the official records of the expeditions, we simply find officers’ names as arrivals to a new kind of training, and bare accounts of their work and performance. We get closer to the Station B observers in Tupman’s letters to the Astronomer Royal and in his official journal of the expedition. They feature as part of the collective and there is a sense that they are included among the “we”, “us” and “our” of which Tupman often wrote: a group that shared experiences and formed opinions together, including negative views of one expedition member.⁸ But these are official reports and, although often revealing, are limited in the ways we might expect.

E.J.W. Noble produced an entirely different kind of document, which must be read carefully within a number of contexts. After introducing the artist, his companions and the source, these unique documents will be considered alongside other examples of drawing, creation of albums, and recording and memorialising of expeditions. The caricatures drew inspiration from and, in a private manner, contributed to the large visual and literary record of travel, generally, and the 1874 transit of Venus expeditions, specifically. They will also be discussed as examples of the

⁷ M. Chauvin, *Hōkūloa* (note 4), p. 206, endnote 25. Throughout the book the officers appear only briefly, their names being mentioned a fraction of the times of the others’. Noble’s brief report from 8 December 1874 is in George Biddell Airy, *Account of the Observations of The Transit of Venus, 1874, December 8, Made Under the Authority of the British Government: and of the Reduction of the Observations* (London: HM Stationary Office, 1881), pp. 62-3.

⁸ Papers of George Lyon Tupman, Royal Greenwich Observatory Archives (Cambridge University Library), RGO 59. The first two volumes of Tupman’s Home Journals (RGO 59/56/1-2), beginning 15 May 1872, detail the period of organization and training at Greenwich; the Honolulu Station Journal (RGO 59/70) follows the expedition overseas. Tupman’s journals are included in Cambridge Digital Library’s Transit of Venus Collection: <https://cudl.lib.cam.ac.uk/collections/tov> [accessed 17 October 2016]. Tupman’s correspondence with the Astronomer Royal on transit of Venus matters is among the Papers of George Airy, Royal Greenwich Observatory Archives, including RGO 6/267 and 270.

use of humour in relation to science and to develop bonds between members of an expedition. Noble's knowing subversions of the heroic, military and imperialist modes in which the transit of Venus expeditions were publicly represented can be interpreted as an insider's view and, perhaps, as a claim to a kind of scientific masculinity that placed value in self-effacing dedication rather than flashy heroics.⁹ Despite his usual role, and the close links between science and the military evident within these and other expeditions, Noble carefully differentiated himself and his companions not only from the native and settler populations encountered, but also from British soldiers, diplomats and unofficial observers. The evidence and comparative cases suggest that the caricatures were shared with the group and, given their sheer number, were in demand. If so, the overlapping identities of military, scientific and expeditionary culture they reveal, and Noble's take on events and people, must have been found amusing and acceptable by the group. The caricatures thus probably played a role in reinforcing group cohesion, as well as leaving historians with an exceptional case study for exploring Victorian expeditionary culture.

2. "The Life & Adventures of Station B"

In 1874, Noble was a lieutenant in the Royal Marine Artillery and, apart from his nearly two-year secondment to transit of Venus duties, a career Marine. He had served on HMS *Ocean* at China Station (1869-72), was promoted to Captain (1877), twice mentioned in despatches and awarded brevet of Major and the Order of Medjidie (1882) for his role in actions in the Middle East. He commanded the Royal Marines on special police duties in Dublin in 1882, was a Staff Officer in 1883 and became a Military Instructor on the General Staff of the RMA in 1887 before retiring in 1892 and dying, just four years later, aged 47.¹⁰ He was 24 when he joined

⁹ On masculinity and imperialism, see John Tosh, *Manliness and Masculinities in Nineteenth-Century Britain: Essays on Gender, Family, and Empire* (Harlow: Pearson Longman, 2005), pp. 192-214; on scientific masculinity see the introduction and essays in Erika Lorraine Milam and Robert A. Nye (eds), *Scientific Masculinities, Osiris* 30 (Chicago: University of Chicago Press, 2015).

¹⁰ Royal Marines Badge and Insignia Reference: Service History http://www.rm-badges.com/DAPShowGraveFile.php?id=132003170&location=images_graves and newspaper obituary http://www.rm-badges.com/DAPShowGraveFile.php?id=132003175&location=images_graves. Noble's

other trainee officers attached to the transit expeditions at the newly opened Royal Naval College, Greenwich, in September 1873. He arrived at the same time as Lieutenant Leonard Darwin of the Royal Engineers, later than the bulk of “volunteer” Royal Navy officers, who started in July. Our Lieutenant Noble seems to have replaced another Lieutenant Noble, possibly his brother Edward, who entered the Navy in 1861 (their father, Jeffrey Wheelock Noble, was a Royal Navy captain).¹¹ More than one officer had chosen to leave after beginning their repetitive training in observation and calculation. Lieutenants Ross and Botcher, for example, arrived on 2 September but the former, having “expressed his determination to ‘try his hand’”, had left by the 18th, while the latter withdrew immediately “after an interview with [Tupman] regarding the nature of the work required”.¹²

Noble may have had advance warning about the nature of the work from his brother but he was a novice in astronomy. While Darwin, who had received higher mathematical education at the Royal Military College in Woolwich, was set to observing straight away, Noble was “reading Loomis”, an elementary astronomy textbook by Elias Loomis.¹³ Nevertheless, he was soon being instructed in how to adjust the altazimuth telescope, to determine Greenwich time by observing the Moon, and was having his computations scrutinised. Unlike the work of Lieutenant Smith and Henry Barnacle (“not yet satisfactory” and “very unsatisfactory”), Noble’s seems to have passed muster. On 26 December 1873 he was among the majority

medals were sold in 1991 <http://www.christies.com/lotfinder/lot/three-major-e-j-w-noble-royal-2910688-details.aspx> [accessed 19 October 2016].

¹¹ Tupman, Home Journal 1, records officers who joined 25 Jul 1873 (<https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00056-00001/29>), the resignation of Lieutenant Noble RN on 5 Sep (<https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00056-00001/45>) and arrival of Lieutenant Noble RMA on 15 Sep (<https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00056-00001/48>). For Edward and Jeffrey Noble, see Admiralty: Officers’ Service Records (The National Archives), ADM 196/17/178. Naval officers training as transit observers were accommodated at the College (founded January 1873), while civilian volunteers had to find their own accommodation. Training was done at the College, Royal Observatory, Greenwich, and Greenwich Park.

¹² Tupman, Home Journal 1, p. 36, 2 Sep 1873, <https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00056-00001/44>. Tupman and Airy were concerned about the low rates of pay and the quality of officer that the Admiralty was prepared to encourage to volunteer: J. Ratcliff (note 3), p. 82.

¹³ Darwin’s skills were emphasised by his father, Charles, in a letter to the Astronomer Royal’s son (RGO 6/273, ff. 348-9, quoted in M. Chauvin, *Hōkūloa* (note 4), p. 204, endnote 34). Tupman, Home Journal 1, pp. 40-1, <https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00056-00001/48> to <https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00056-00001/49>.

classed as “Astronomically prepared”.¹⁴ He practised transit and equatorial observations, setting up and taking down instruments and observing huts, and making observations of a model simulating the transit. Despite Chauvin’s suggestion that in Honolulu Tupman chose to keep Noble “under the watchful eye of an officer of higher rank”, it appears that he was trusted and useful.¹⁵ Tupman asked him to direct a group of civilian trainees in taking down and re-erecting a hut, for example, and to superintend the departure of the 75 tons of Station B baggage from Greenwich to London, which is the opening event in Noble’s albums (Fig. 1). Tupman considered Noble and Forbes’s work in seeing the baggage from London to Birkenhead and loaded on board ship “first rate”.¹⁶

A photograph of the observers, the *dramatis personae*, is included at the beginning of the first album (Fig. 2). As well as Noble, Tupman and Forbes, there are John Walter Nichol, an assistant at the Royal Observatory, Edinburgh; Lieutenant Francis Edward Ramsden, RN, the expedition’s photographer; Richard Johnson, who taught experimental science at Trinity College Dublin; and Henry Glanville Barnacle, who had recently received his BA at Cambridge. Tupman, Noble, Nichol and Ramsden were at the main station at Honolulu, O’ahu, while Johnson was at Waimea, Kauai, and Forbes and Barnacle at Kailua-Kona, on the island of Hawai’i. Three out of the seven, or three out of four at the main station at Honolulu, were military men; all were bachelors and relatively young. Tupman was the eldest at 36, and is referred to in the caricatures as “the Captain”. Johnson, often dubbed “our venerable [or esteemed] old friend”, was 34; Nichol, 31; and Forbes, “the Professor”, was, like Noble, Ramsden and Barnacle, 25.¹⁷ Although the university men, Forbes and Johnson, were the ones

¹⁴ Tupman, *Home Journal* 2, p. 48 (26 Dec 1873), <https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00056-00002/13>. The comment about Smith was 7 Nov 1873, Barnacle 28 Feb 1874.

¹⁵ M. Chauvin, *Hōkūloa* (note 4), p. 47.

¹⁶ Tupman, *Home Journal* 2, p. 65 (1 Mar 1874), <https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00056-00002/30>; Tupman to Noble, 7 May 1874, RGO 6/273, f. 783; Tupman, *Home Journal* 2, p. 94 (26 May 1874), <https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00056-00002/62>.

¹⁷ Biographical information is from obituaries indexed by the Royal Astronomical Society, Royal Navy service indexes at The National Archives and M. Chauvin, *Hōkūloa* (note 4). Tupman, Ramsden and Barnacle all married within a few years of the expedition; Noble, Johnson, Nichol and Forbes remained unmarried. Several died young (Noble at 47, Ramsden at 32 and Nichol at 35) or bear out Tosh’s

trusted to lead sub-stations, the fact that the overall leader was an officer, and that Barnacle and Nichol were on a par with Ramsden and Noble, suggests that neither age nor civilian/officer status dictated a hierarchy. While the caricatures involve some gentle teasing about individuals' foibles and habits, there is a strong sense of affection. Nichol, who died just four years later, was remembered in his obituary for his "genial and kindly nature" and "excessive *bonhomie*" – he contributed his geniality to the group dynamics, and Noble his caricatures.¹⁸ Only Barnacle, as discussed in the final section, was partially left out of what was otherwise a strong unit.

The two albums form a memoir of, or memorial to, events unique in the lives of all the men involved. The caricatures are presented as a completed narrative: the inside front cover states "By E.J.W. Noble – R.M. Art" and the title page "The Life & Adventures of Station B/ Tr. Venus Expedition 1874/ Commencing 1874 May 27/ Ending 1875 June 9".¹⁹ The albums contain 78 sheets of caricature drawings, varying from single to multiple images, and trace the entire expedition, starting and ending at the Royal Observatory, Greenwich. They picture the observers' activities as they and their equipment travel by sea to Honolulu, via Birkenhead, Bahia, Rio de Janeiro and Valparaiso. In the Sandwich Islands the caricatures reveal them setting up the temporary observatories, mounting and adjusting instruments, making routine and exceptional observations, carrying out chronometer runs to establish longitudes, engaging with Honolulu society, and battling with local cats, rain, mosquitoes, boredom, interruptions and other hazards. The second volume includes Noble's trans-continental return journey with Tupman, via Vallejo, San Francisco, Sulphur Creek, Salt Lake City, Chicago, Niagara, Washington and New York. The expedition party and their hosts – ships' captains, King

observation that at this period "Reluctance to marry was a demographic fact" that underpinned military and imperial service: J. Tosh (note 9), p. 106.

¹⁸ 'John Walter Nichol', *Monthly Notices of the RAS*, 39 (1879), 237.

¹⁹ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/2> and <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/3>. The "By" is added in pencil, probably in a different hand. This may represent the album's passing to another owner, or perhaps a clarification by a later Tupman family member. My thinking about the making and use of the drawings has been shaped by James A. Secord, 'Scrabook Science: Composite Caricatures in Late Georgian England', in *Figuring it Out: Science, Gender and Visual Culture*, ed. by Ann B. Shteir and Bernard Lightman (Hanover and London: University Press of New England, 2006), pp. 164-91.

Kalākaua, the British Commissioner and other local dignitaries, immigrant families, officers, surveyors and instrument makers – are depicted, as are the landscapes, sightseeing opportunities, observing huts, instruments and their packing cases.

The caricatures confirm many aspects of expeditionary culture that historians have come to anticipate. Expeditions and science in the field have been “in the limelight as a model of authentic, situated practice”, central to the process of what Steven Shapin has called “lowering the tone” in the history of science.²⁰ Noble’s caricatures are almost exemplary in revealing the unsung participants beyond the leadership and the difficulties of maintaining literal and figurative boundaries in the field. They show the work required to generate collective effort within heterogeneous groups comprised of amateurs, professionals, civilians and military, and to ensure that observations and accounts were trustworthy. They reveal the tedious, material and embodied nature of the work undertaken, and the sheer effort required to transport and set up precision instruments for expeditionary work.²¹ They also exemplify Martin Thomas’s description of expeditions as an “outpouring of cultural product”, indeed as self-referential and self-replicating “machines for producing discourse”.²² They responded to existing texts, images and traditions associated with expeditionary naval and scientific culture, and to public discussion about the transit of Venus effort and role of science more broadly. As caricatures

²⁰ Robert E. Kohler and Jeremy Vetter, ‘The Field’, in Bernard Lightman (ed), *A Companion to the History of Science* (Chichester: Wiley Blackwell, 2016), pp. 282-95, p. 290; Steven Shapin, ‘Lowering the Tone in the History of Science’, in *Never Pure: Historical Studies of Science as if it was Produced by People with Bodies, Situated in Time, Space, Culture and Society, and Struggling for Credibility and Authority* (Baltimore: Johns Hopkins University Press, 2010), pp. 1-14.

²¹ Foundational for thinking about the field as a category and place for science is Henrika Kuklick and Robert E. Kohler (eds), *Science in the Field, Osiris* 11 (Chicago: University of Chicago Press, 1996). Here, and in the recent Martin Thomas (ed), *Expedition into Empire: Exploratory Journeys and the Making of the Modern World* (New York and Abingdon, Routledge, 2015), there has also been focus on the nature and variety of collective scientific labour, the personae adopted and the material and practical realities. On travel, practice and instruments, see e.g. Marie-Noëlle Bourguet, Christian Licoppe and Heinz Otto Sibum (eds), *Instruments, Travel and Science: Itineraries of Precision from the Seventeenth to the Twentieth Century* (London: Routledge, 2002) and Fraser MacDonald and Charles W. J. Withers (eds), *Geography, Technology and Instruments of Exploration*, ed. by (Farnham: Ashgate, 2015).

²² Martin Thomas, ‘What is an Expedition? An Introduction’, in M. Thomas (note 21), pp. 1-24, pp. 5, 6.

they did this in humorous and ironic mode, revealing of tensions that could be exploited for effect, and the peculiarities and requirements of this microculture.²³

In the completed albums, each sheet of caricatures has its own page opening, with place names added as a title and to re-establish a sense of chronology and geography. As the albums are in the possession of the Tupman family, they must have been given to Tupman, perhaps at the end of the expeditions, when observers' official workbooks and journals were handed over and they went their separate ways. This is supported by the fact that the final sheet of caricatures imagines the seven observers at their various pursuits in the months after the expedition (see Fig. 10).²⁴ Such a gift would have acknowledged Tupman's significance as expedition leader and his lead role in the caricatures themselves. It was, presumably, a gesture of thanks, and a hope that he would remember the expedition and those on it fondly, particularly the fellow Marine who accompanied him on his long return journey by rail across America. However, the caricatures should also be thought of as having previously been separate sheets of paper, usually depicting a theme or events within a discrete time period, drawn over the course of a year spent on expedition.

3. Expeditionary texts and contexts: albums, images and humour

Noble's albums should to be understood within the broader public and private contexts of expeditionary media production. This section will consider, firstly, the tradition of drawing, recording and album-making that was encouraged within the navy; secondly, the production of imagery during the preparations for and execution of the transit of Venus expeditions; and, thirdly, the use of humour to develop a sense of group harmony and mitigate stressful circumstances, including on expeditions. Each of these help explain why the drawings were produced, the kind of functions they may have had, and their appearance and content. The

²³ On satire and irony in relation to the contested boundaries of scientific legitimacy, see James G. Paradis, 'Satire and Science in Victorian Culture', in *Victorian Science in Context*, ed. by Bernard Lightman (Chicago and London: University of Chicago Press, 1997), pp. 143-75.

²⁴ Noble, Album 2, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00002/22>.

caricatures do not show us Noble in the act of creating or sharing his drawings, although we frequently see him with pen and paper, scratching his head over endless calculations. We are left to imagine these activities, placing them alongside the other ways in which the men passed their time. These include sketching, dining, sleeping, reading, drinking, smoking, playing the piano, singing and dancing, which all played their part in relieving tedium and, usually, generating a sense of solidarity.

For Noble, from a naval family, drawing might be seen as an outcome of training and as part of regular practice, encouraged along with a range of other means of recording voyages. Drawings, notes and photographs were often subsequently gathered into albums. Felix Driver has argued that such albums were part of “the visual culture of exploration”, a continuum of forms of drawing and note-taking within naval culture, ranging from log books and coastal outlines, to botanical and ethnographic observations, or scene-taking and souvenir-making. Observation and drawing were key skills developed by officers as part of a shared and social practice, combining observation, memory and memorialisation.²⁵ The records were produced for the individual, for sharing with other officers, for the enjoyment of family back home and as a souvenir. Tupman had earlier kept his own album, in which he, typically, kept his watercolours and drawings of places he visited and ships he travelled on. These drawings shared space with commercial photographs – including a page of artfully presented portraits of friends and family, as well as of his regiment and exotic scenes and people – and drawings given by or exchanged with others.²⁶ Such a mixture was common and often albums were, on long voyages or back home on

²⁵ Felix Driver, ‘Maritime Science and the Visual Culture of Exploration: The Albums of a Victorian Naval Surgeon’, lecture at the Royal Society, 8 March 2013 (recording available at <https://royalsociety.org/events/2013/victorian-naval-albums/> [accessed 17 October 2016]), and Felix Driver and Luciana Martins, ‘John Septimus Roe and the Art of Navigation, C. 1815-1830’, *History Workshop Journal* 54 (2002), 144–61.

²⁶ Tupman, Album (private collection), <https://cudl.lib.cam.ac.uk/view/MS-TUPMAN-00002>.

half pay, arranged into decorated or collage designs that are, in more domestic settings, associated with albums created by women.²⁷

Naval albums were one genre among the many images, narratives and accounts produced by European travellers that contrasted western civilization with the colonial ‘other’, within exotic and picturesque landscapes. The assumptions encoded in Tupman’s commercial photographs of foreign ‘types’ are echoed in Noble’s drawings of Hawaiians. The emptiness of Hawai‘i, including evidence of recent depopulation, was contrasted with the burgeoning social world of American and European immigrants in Honolulu. These men were consumers of, and contributors to, the imperial vision of travel literature and imagery that constructed, overseas, places ready to be conquered and enlightened and, at home, supporters of empire and imperialism.²⁸ Forbes quite literally read the coastline near his observing station through the 100-year-old words of the most famous of British scientific and naval travellers as he spotted landmarks from Captain James Cook’s narrative and surveys.²⁹ The popularity of narratives of travel and empire played a large role in the way that the 1874 transit of Venus expeditions – linked back to Cook’s voyage to observe the 1769 transit – were presented to the public. Exotic locations and difficulties encountered were shown as overcome by steady bands of European men and the triumphs of western technology and its military and commercial reach.

As visual and textual representations of the transit of Venus equipment and expeditions, Noble’s drawings entered and responded to a crowded arena. From the beginning of their training, he and his companions contributed to this in several ways. Photographs of all the equipment had

²⁷ On naval albums see Charlotte Mullins, ‘The World on a Plate: The Impact of Photography on Travel Imagery and its Dissemination in Britain, 1839-1888’ (unpublished PhD thesis, University of Sussex, 2012); on scrapbooks and gender, see J. Secord (note 19).

²⁸ There is a wide literature on constructions of empire by travellers and men of science. See, e.g., Mary Louise Pratt, *Imperial Eyes: Travel Writing and Transculturation* (London: Routledge, 2008); Felix Driver and Luciana de Lima Martins (eds), *Tropical Visions in an Age of Empire* (Chicago: University of Chicago Press, 2005); James R. Ryan, *Picturing Empire Photography and the Visualization of the British Empire* (Chicago: University of Chicago Press, 1997); Jeffrey Auerbach, ‘The Picturesque and the Homogenisation of Empire’, *British Art Journal* 5 (2004), 47–54.

²⁹ George Forbes, *Kailua Journal*, RGO 59/69 (16 Dec 1874), <https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00069/42>.

been made at Greenwich in 1873, while the observers were practising with the instruments and observing huts. In order to generate public interest and approval for significant expenditure, the press were given copies of these photographs and invited to view the temporary observatories and practice model. The images were widely circulated and recycled by the scientific and general press in the form of engravings. Likewise, photographs taken and drawings made during the expeditions found their way into the pages of the *Illustrated London News*, the *Graphic* and other periodicals.³⁰ This material was subsequently drawn into humorous commentary and visualisations in magazines such as *Punch*. General accounts of the transit and expeditions were widely available in the British and international press. The Station B observers' hosts were, for example, prepared with articles in the *Hawaiian Gazette* and *Pacific Commercial Advertiser*.³¹

There are several examples of the Station B observers engaging with this public presentation of the expeditions. Forbes published an account of the transit that included engravings from the Greenwich photographs, notably of a photoheliograph telescope, and named the official observers.³² The book's preface was written on the SS *Illimani*, the Pacific Steam Navigation Company ship that took Forbes, Noble, Ramsden and Barnacle to South America. Ramsden took photographs en route and of the observatory compound at Honolulu. Two of these were included in Noble's albums, in which there is also a drawing of Ramsden "at it again", with his camera on the Tijuca mountains near Rio (Fig. 3).³³ Engravings made from Ramsden's photographs of Station B, its observers, and their sojourn in Santiago, appeared in the *Graphic* and *Illustrated London News*. The latter also published an engraving of the Honolulu compound and observers during the crucial observations of 8 December. This was based on a drawing

³⁰ Photographs of Instruments and Stations, RGO 6/276, <https://cudl.lib.cam.ac.uk/view/MS-RGO-00006-00276>. On the relationship between photographs and periodicals in the case of the transit of Venus expeditions, see Geoffrey Belknap, *From a Photograph: Authenticity, Science and the Periodical Press, 1870-1890* (London: Bloomsbury, 2016), pp. 167-209. See also J. Ratcliff (note 3), pp. 78, 96-7.

³¹ M. Chauvin, *Hōkūloa* (note 4), pp. 28-9.

³² G. Forbes (note 6), pp. 69, 81, 97. This was based on his series of articles in *Nature*, April-June 1874. G. Belknap, (note 30), pp. 198-99, points to this photoheliograph image as one of the most widely reproduced, although misidentifies it as depicting the Station B instrument (it is the Station D one <https://cudl.lib.cam.ac.uk/view/MS-RGO-00006-00276/21>). Both were photographed in Greenwich but the station's letter is stencilled onto the hut.

³³ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/12>.

rather than a photograph, and the text explained that it, and “a report of their actual experience upon that occasion” had been supplied by Noble.³⁴ By permission of the Astronomer Royal, Lieutenants Ramsden and Noble became the voice of the expedition and they, like all the transit observers, were conscious of their public role.

Noble cut out this *ILN* engraving and pasted it into his second album (Fig. 4). It reminds us that he was a fair representational artist and that he and his fellows were steeped in the drawings, engravings and photographs representing the transit of Venus enterprise and, more generally, British overseas activity. While the people Noble depicted in his caricatures are recognizable but two-dimensional, the backgrounds and, above all, the instruments and observing station are often meticulously reproduced, looking more realistic and three-dimensional. Given the rain and heat, and the depiction of events at a distance or in retrospect, it seems likely that Noble would sometimes have worked from photographs and engravings. The *ILN* engraving shows, however, what a drawing alone can achieve: an angle of view, moment in time and group of individuals that could never be captured by a camera. This is underlined even more radically by the caricatures, which, aiming for a sense of fun, present people and things in motion, moments of dramatically heightened emotion, and events not witnessed by the artist, or that never happened. Through memory and imagination, Noble captured unreal things that would nevertheless have been quickly recognizable to his companions, referring as they did to shared stories and experiences.

Noble’s albums are an unusually complex and complete example of the use of caricature within semi-private and expeditionary contexts. Tupman’s album, for example, included drawings that

³⁴ ‘The Forthcoming Transit of Venus (From Photographs Received from the Honolulu Detachment)’ *The Graphic* (5 December 1874), 553; ‘The Transit of Venus: Waiting for Contact at Honolulu’, ‘Sketches of Stations Where the Transit of Venus Was Observed’ and ‘The Transit of Venus’, *Illustrated London News* (23 January 1875), 72-4.

verge on caricature and clippings from *Punch*.³⁵ Likewise, Owen Stanley's sketchbooks include caricatures of life at sea and a surveying party alongside sketches and more worked-up drawings of ships, landscapes and buildings.³⁶ These examples followed a trend from about the 1830s for such images in sketchbooks and letters, which can be linked to the rise of line-drawing caricature in print, and the triumph of magazines like *Punch*.³⁷ Caricature and humour used in private correspondence or within close circles can reinforce connections and codes of conduct. Henry De La Beche, for example, drew caricatures in letters, sketchbooks and for circulation to create intimacy among family and friends, and a sense of common cause for practical geologists.³⁸ The use of in-jokes, often at the expense of others, can develop a sense of belonging for those undergoing common experience, such as within a workplace or club.³⁹ In an expeditionary context it was often a matter of necessity to work effectively as a group and to maintain morale in difficult times. To achieve this, joking might be officially sanctioned, as with the polar voyages that saw the publication of lightly humorous illustrated newspapers and the staging of riotously fun theatrical productions.⁴⁰ The 1948 expedition that Thomas notes as having "had its own folklore", including comic songs written on expedition and reprised at reunions, was entirely typical and followed long tradition.⁴¹

³⁵ Tupman, Album includes a series of drawings of RMA officers, including Tupman <https://cudl.lib.cam.ac.uk/view/MS-TUPMAN-00002/27> to 29, by J.C. Crawford, possibly John Chesterton Crawford, RMA (1837-79).

³⁶ See e.g. Owen Stanley, 'Departure of H.M.S. Erebus and Terror for the North Pole, 1845' (National Library of Australia), 2487793, <http://nla.gov.au/nla.obj-138502858/view> and 'Preparing to Observe', c. 1830, NLA, 962884, <http://nla.gov.au/nla.pic-an3016581> [accessed 17 October 2016].

³⁷ Nicholas Hiley, 'Comic Periodicals', *19th Century UK Periodicals* (Detroit: Gale, 2008).

³⁸ Martin J. S. Rudwick, 'Caricature as a Source for the History of Science: De La Beche's Anti-Lyellian Sketches of 1831', *Isis*, 66 (1975), 534-60.

³⁹ Examples from the history of science include Janet Browne, 'Squibs and Snobs: Science in Humorous British Undergraduate Magazines Around 1830', *History of Science*, 30 (1992), 165-97 and Daniel Brown, 'Red Lions: Edward Forbes and James Clerk Maxwell', in *The Poetry of Victorian Scientists: Style, Science and Nonsense* (Cambridge: Cambridge University Press, 2013), pp. 89-109. J. Paradis (note 23), p. 170 refers to the "in-group irony" found in the private correspondence of the X-Club. Broader studies of such workplace humour and "jokelore" include Alan Dundes and Carl Patger, *When You're Up To Your Ass In Alligators: More Urban Folklore from the Paperwork Empire* (Detroit: Wayne State University Press, 1987).

⁴⁰ The *North Georgia Gazette and Winter Chronicle* was produced when William Edward Parry's expedition overwintered in 1819/20, the *Illustrated Arctic News* on HMS *Resolute* in 1852 and the *South Polar Times* on Robert Scott's Antarctic expeditions. On polar theatricals, see Mike Pearson, "'No Joke in Petticoats': British Polar Expeditions and Their Theatrical Presentations", *TDR*, 48 (2004), 44-59.

⁴¹ M. Thomas (note 21), p. 7.

Although evidence regarding the production, use and afterlife of Noble's drawings is limited, such examples suggest that it is reasonable to assume that they played a role in entertaining the Station B observers and thus cohering them as a group. The content and material nature of the caricatures also support the view that they were produced throughout the expedition in order to be shared and that they reflected collective experiences, attitudes and responses. Many of the images relate to trivial events and details that seem unlikely to be given similar prominence if the drawings had been generated significantly later. The use of in-jokes, nicknames and the third person, as well as the representation of somewhat disreputable behaviour, suggest that the caricatures were not produced for Noble's personal use or to show family back home. Produced on separate sheets of paper, they would have been readily passed around and, although they may not have always hit the mark, the fact that he produced so many and that Tupman kept them suggests that they brought pleasure. There is also evidence of change over time within the albums. Earlier sheets tend to contain more images, giving a 'comic strip' effect, with some even containing numbered panels. Later, more sheets have four, two or one image. In the latter part of the second album, once the team had dispersed, the job done, and many caricatures produced, the images are often larger, sparser and less humorous. Noble, although bound to completing his self-allocated task of recording the whole expedition, perhaps found himself with less rich material to work with and less social need for his drawings when travelling just with Tupman or alone. It seems, too, that he was more likely to depict drunken antics of the observers while travelling out with the three other young men than when working and travelling with the older Tupman, Nichol or Johnson.

If created for the purpose of entertaining his comrades, Noble's caricatures had a role to play in establishing in-group harmony. We can see such a role in action when considering one of the images with the broadest humour, which showed the moment when a cocoanut tree was blown down, perilously close to the observing huts and transit clock (Fig. 5). This almost slapstick depiction eased the "anxiety" felt about threats to the expedition's success and united those who claimed to feel it most: Tupman and the officially appointed Honolulu observers. It contrasts

markedly with another image that memorialised the same event (Fig. 6). This photograph, taken after the event, shows 15 people, including observers, supernumeraries, hired carpenters and others, around the fallen tree. In one way, the contrast emphasises the problems of using caricatures as historical sources: they are by no means documentary and contain much exaggeration. Their humorous shorthand may be lost to those outside the in-group or at a geographical or historical distance. However, working from our sense of presumed purpose and audience, we can find clues about self- and group-identity.⁴² Among many interesting contrasts, we may note that Noble chose not to draw many of the people who were within the observing compound, and to form a group from the captain, observatory assistant and two lieutenants, united in their concern and common purpose.

4. Expeditionary identities: military, scientific and heroic masculinity

The main subjects of Nobel's caricatures were, then, servicemen and astronomers. Of 22 official observers in what Agnes Clerke called "the grand campaign" of 1874, thirteen were officers (7 Royal Navy, 3 Royal Engineers, 2 Royal Marine Artillery, 1 Royal Artillery). In addition, many servicemen – sappers, marines and sub-lieutenants – were co-opted as assistants, guards and servants. Four out of five expeditions had military leadership, in charge of mixed teams of officers, professional and amateur astronomers.⁴³ The close association of army and navy officers with scientific expeditions has been a key theme within history of science, underscoring the links between science, nation and empire and the mutual benefits of travel, collecting, observation, precision and knowledge.⁴⁴ Sometimes essential for providing transport and camp, servicemen were also useful for hefting equipment and potentially valued as observers. They

⁴² See the introduction to Richard Scully and Marian Quartly (eds), *Drawing the Line: Using Cartoons as Historical Evidence* (Clayton, Victoria: Monash University ePress, 2009).

⁴³ Agnes Mary Clerke, *A Popular History of Astronomy during the Nineteenth Century* (Edinburgh: A & C Black, 1885), p. 282; G. Forbes (note 6), pp. 93-4 listed the official observers.

⁴⁴ See e.g. essays in M. Bourguet, C. Licoppe and H. Sibum (note 21); M. Norton Wise (ed.), *The Values of Precision* (Princeton: Princeton University Press, 1995); Rebekah Higgitt, 'Equipping Expeditionary Astronomers: Nevil Maskelyne and the Development of "Precision Exploration"', in F. MacDonald and C. Withers (note 21), pp. 15-36; John Gascoigne, *Science in the Service of Empire: Joseph Banks, the British State and the Uses of Science in the Age of Revolution* (Cambridge: Cambridge University Press, 1998). On 'scientific serviceman' see David Philip Miller, 'The Royal Society of London 1800-1835: A Study in the Cultural Politics of Scientific Organization', (unpublished PhD Dissertation, University of Pennsylvania, 1981), 120-32.

might be assumed to have some familiarity with mechanical devices and optical instruments (although Tupman pointed out to George Airy, the Astronomer Royal, that this was not necessarily the case), and intimate acquaintance with discipline, drill and the need to perform under pressure.⁴⁵ In 1898, *Nature* considered naval officers “so familiar with optical instruments, that they need but few hints to make most of the observations required during eclipses”.⁴⁶ Military and naval officers also, of course, brought experience of expeditionary life, including dealing with boredom, uncomfortable circumstances, enforced proximity and, often, exclusively male company.

Indeed, as increasing focus was put on training, instruments and protocols to provide reliable results in the field, it was, it seems, the men of science who were to become more like the military, than the military officers who needed to don the mantle of man of science.⁴⁷

Photography was intended to eliminate “[p]eculiarities of vision and bias of judgement”, while training, uniformity of instrumentation, and careful establishment of each observer’s ‘personal equation’ was to iron out differences in visual observation.⁴⁸ As Clerke put it, the 1874 transit of Venus observer, from professor to lieutenant, was to act as one: “his senses drilled into a species of martial discipline, his powers absorbed, so far as possible, in the action of a cosmopolitan observing machine.”⁴⁹ Nevertheless, this “martial discipline”, as “self-denial in the service of co-ordination”, could be given significant moral value.⁵⁰ It was essential that, to ensure legitimacy, science remain distinct, associated with disinterested knowledge as well as utility,

⁴⁵ Alex Soonjung-Kim Pang, *Empire and the Sun: Victorian Solar Eclipse Expeditions* (Stanford, CA: Stanford University Press, 2002) p. 45; Tupman’s comment is quoted in J. Ratcliff (note 3), p. 82. See also Pang, ‘Gender, Culture, and Astrophysical Fieldwork: Elizabeth Campbell and the Lick Observatory–Crocker Eclipse Expeditions’, in H. Kuklick and R. Kohler (note 21), pp. 17-43.

⁴⁶ ‘The Total Eclipse of the Sun’, *Nature* (17 Feb 1898), 366, quoted in A. Pang (note 45), p. 163, endnote 108.

⁴⁷ See Peter Galison and Lorraine Daston, ‘Scientific Coordination as Ethos and Epistemology’, in *Instruments in Art and Science: On the Architectonics of Cultural Boundaries in the 17th Century*, ed. by Helmar Schramm, Ludger Schwarte and Jan Lazardzig (Berlin: Walter de Gruyter, 2008) pp. 296–333.

⁴⁸ Quote from A. Clerke (note 43), p. 277. On the personal equation, division of labour and working across distant observing sites, see Simon Schaffer, ‘Astronomers Mark Time: Discipline and the Personal Equation’, *Science in Context*, 2 (1988), 115–45.

⁴⁹ A. Clerke (note 43), p. 279.

⁵⁰ P. Galison and L. Daston (note 47), p. 325.

and with self-control rather than automated drill.⁵¹ While the military and imperial aspects of these expeditions were made explicit in much of the reporting, and they undoubtedly underpinned the logistics, the caricatures reveal that they did not feel like business as usual to the officers involved. The military-style drill and the scientific training created a new group from the disparate volunteers, as the observers were “socialized and standardized” to form a coherent network, both through training and active management and reinforcement on expedition.⁵²

Something that the Noble caricatures make clear, which is not immediately apparent from other sources, is that the officers largely shed their military identity for the duration of the expedition. Although uniforms were donned for official occasions at the palace, they otherwise all wore civilian clothes, whether on board ship, in towns or the observing compound. It seems clear that the group identity Noble created in the caricatures was primarily that of scientific men: individuals dedicated to the pursuit of knowledge for its own sake or the common good.⁵³ He assumed this role temporarily and, even within his humorous acknowledgement of the lowly status of his work and limited mastery of the subject, presented himself as part of that group, while excluding others. As Milam and Nye point out, “social constructions of masculinity function simultaneously as foils for femininity and as methods of differentiating between kinds of men”, working to exclude or to bolster claims to authority.⁵⁴ In the case of Noble, this meant presenting the Station B observers as a coherent group that was contrasted with other people who took an interest in their proceedings. In order to counter any insecurity within that role, contrasts were repeatedly made with other people, whether officers, diplomats, native

⁵¹ Henrika Kuklick and Robert E. Kohler, ‘Introduction’, in H. Kuklick and R. Kohler (note 21), pp. 1-14, pp. 9-10.

⁵² P. Galison and L. Daston (note 47), p. 300.

⁵³ “Scientific men” and “men of science” were used into the 1880s to characterise those who, whether professional or amateur, were considered active, reliable and disinterested contributors to science: Ruth Barton, “‘Men of Science’: Language, Identity and Professionalization in the Mid-Victorian Scientific Community”, *History of Science* 41 (2003), 73-119. Galton’s *English Men of Science* was published in 1874 and in 1887 *Nature* described those who sought “truth for truth’s sake”, whether “professors or manufacturers, soldiers or physicians”, as “scientific men”: *ibid*, pp. 74, 88.

⁵⁴ E. Milam and R. Nye (note 9), p. 3.

Hawaiians, women, missionaries, or colonial settlers. We might expect Noble's drawings to be a record of scientific activity by a scientific outsider, in fact they show, as the volume's title suggests, the "Life & Adventures" of a group.

4.1 A non-military group identity

Noble's caricatures present a group of men travelling and working together over more than a year. Differences between the officers and civilians almost disappear. Noble, posted to HMS *Ocean* at China Station, had recently spent several years almost continuously at sea but, rather than depicting any difference between his ability to adapt to the voyage and that of the civilians, he showed them all as troubled by the complexities of sleeping, washing and dressing on a moving ship. Likewise, the group's appetite for tackling rugged terrain while sightseeing en route or on Hawai'i does not appear to come down to a matter of military fitness, and Noble was happy to represent everyone's difficulties or getting lost, as well as his own struggles with horsemanship.⁵⁵ Where there is a difference, it is between Tupman, as chief of the expedition, and the rest. He is the taskmaster and corrector of errors in calculations; he is also shown as dedicated to observing, including additional phenomena at sea or weather recordings at Station B, keenly at work while others, particularly Noble himself, sleep or shrink from the rain.⁵⁶

This disciplined and self-denying model of scientific endeavour typified one form of masculine heroism applied to science. While it could draw on military metaphors, a different, more overt, military-masculine heroism was more frequently applied to the transit expeditions. This mode painted scientific expeditions as "a military mission to conquer the Earth's secrets", underscoring the achievements of leaders and obscuring or devaluing the contributions of

⁵⁵ E.g. Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/17> and <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/30>.

⁵⁶ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/18> and Album 2, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00002/4>.

others, particularly women.⁵⁷ While the nineteenth-century transit expeditions involved less difficulty and hardship than those of the previous century, the observers were nevertheless lauded as heroes of science, nation and empire. Clerke was typical in emphasising the inhospitality of some observing locations, and in seeing the observers as “the daring votaries of science”.⁵⁸ The rugged masculinity of the expeditionary teams was contrasted with the passive feminine identity of the object of their observations. Never mind that what they actually saw was a small black spot on the Sun, much ink was spilt in envisioning men of science chasing and capturing the radiant beauty of Venus.⁵⁹ Within the caricatures we see the civilian Forbes depicted within the dashing, physical mould: Noble visualised his descriptions of the privations of “uncivilized” Kailua and his swimming naked to fish, as well as imagining his adventurous, husky-driving journey home via Siberia.⁶⁰ However, it was the less physical and more self-denying model of scientific masculinity that Noble more usually portrayed, in conscious distinction from public discourse. Underplaying the presumed excitement and glamour allowed Noble to both create jokes and to take a more knowledgeable and moral stance.⁶¹ In his rendering, this choice was partly manifest by distancing himself and the group from other military and imperial figures.

⁵⁷ Adriana Craciun, “What is an Explorer?”, in M. Thomas (note 21), pp. 25-50; Naomi Oreskes, ‘Objectivity or Heroism? On the Invisibility of Women in Science’, in H. Kuklick and R. Kohler (note 21), pp. 87–113, p. 96.

⁵⁸ A. Clerke (note 43), p. 278. It is telling that although the Egypt expedition included women as unofficial observers, it is best known for the physical efforts of Captain Charles Orde-Browne in conquering of the steep hills beyond Cairo, with large amounts of equipment. The imagery of exploration, imperialism and masculinity this episode conveyed was irresistible: J. Ratcliff (note 3), pp. 96-7.

⁵⁹ There are many examples, both in humorous and eulogistic accounts. It is visualized in full-page caricatures in *Punch’s Almanack for 1875* (17 December 1874), n.p. and *Funny Folks* (12 Dec 1874), 5.

⁶⁰ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/36>; Album 2, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00002/22>.

⁶¹ The co-existence of these two types of expeditionary and scientific masculinity, and their use in different contexts, are discussed in relation to polar exploration in Michael Robinson, ‘Manliness and Exploration: The Discovery of the North Pole’, E. Milam and R. Nye (note 9), pp. 89-109 and astronomy in K. Maria D. Lane, *Geographies of Mars: Seeing and Knowing the Red Planet* (University of Chicago Press, 2011), pp. 97-139. The different kinds of physicality involved (which, whether moral and aesthetic or about pure strength, served to differentiate scientific men from others) are explored in Michael S. Reidy, ‘Mountaineering, Masculinity, and the Male Body in Mid-Victorian Britain’ in E. Milam and R. Nye (note 9), pp. 158-81; see also Bruce Hevly, ‘The Heroic Science of Glacier Motion’, in H. Kuklick and R. Kohler (note 21), pp. 66-86 and Joanne Begiato, ‘Between Poise and Power: Embodied Manliness in Eighteenth- and Nineteenth-Century British Culture’, *Transactions of the Royal Historical Society* 26 (2016), 125-47.

The observers appear as an exclusive group in many of the caricatures. One, in which particular attention was given to individual characterisation, celebrates the uniting of the party of seven observers, who had travelled in two separate groups, at Valparaiso (Fig. 7). The two top-hatted group leaders – Captain Tupman and Professor Forbes – greet each other gladly, while the trio of Noble, Barnacle and Ramsden run forward to join them, Nichol and Johnson. All, civilians and officers alike, are dressed in civilian attire. Noble had also grown a beard during the voyage, hiding his military moustache.⁶² This image is contrasted with another, showing “Our costumes at Honolulu” as exaggerated tropical hats and pale clothing. The group identity is reinforced on the page before with a view of the whole party, almost indistinguishable from the rear, sitting identically, legs propped up: “Honolulu at last! Our evening attitudes at the Hawaiian Hotel.”⁶³ Conversely, one of only a handful of drawings that feature the officers in uniform turns an official occasion into an astronomical joke. It shows their welcome by King Kalākaua, lined up with dignitaries and officers for a slow entry (a “Retarded Ingress”) and quick escape (their “Accelerated Egress”). The terms link to the choice of observing locations for their views of either the ingress or egress of Venus on the Sun: Hawai‘i had early been identified as “particularly favourable” for observing an accelerated ingress.⁶⁴ There is a sense of the unity of their group of mixed epaulettes and top hats and differentiation from the rest in their impatience with the ceremony.

While the “Retarded Ingress” caricature differentiates the group from other military figures, the drawing of the meeting at Valparaiso simply excluded the sappers who were part of their

⁶² It was permitted for Naval personnel and Marines to wear a beard and moustache, fashionable from the 1850s-60s as masculine and healthy. In the Navy it was neither or both, while Marines were encouraged to wear a moustache only, as in the army, when on shore and were permitted to do so on board ship: Circular, 24 June 1869 and update 8 December 1869, *Navy List* (1870). At the beginning of the voyage Ramsden had only side-whiskers, while Tupman and Noble had moustaches and whiskers. We see Ramsden and Noble growing stubble on *SS Illimani*; Tupman grew a beard while in Honolulu. In greater defiance of military tradition, Noble had his beard shaped into a “Van Dyke” by Tupman, with assistance from Nichol and Ramsden: Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/33>.

⁶³ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/21> and <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/20>.

⁶⁴ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/22>. George Airy, ‘On the Means which will be Available for Correcting the Measure of the Sun’s Distance, in the next Twenty-Five Years’, *Monthly Notices of the RAS* 17 (1857), 208-221, p. 215.

travelling party. Where sappers or marines do appear in the caricatures, their separation from the Station B observers is clear: for example, in uniform and not individualised, they are obedient to the instructions of civilian-dressed Noble at Birkenhead.⁶⁵ Elsewhere, a joke that works around the incongruousness of astronomers behaving in martial fashion has helmeted sappers peeping out from behind the fence of the observing compound while the observers rush out with guns – the astronomer and former mercantile clerk, Nichol, leading the officers. This image represents matters imagined “from a Honolulu point of view”, reflecting the fierceness of the observers’ protection of their time and instruments, which was not, of course, in reality expressed with guns.⁶⁶ Throughout the caricatures, we find that others who assisted at the observing stations are rarely represented and, where they are, appear anonymous and differentiated from the official observers. One exception is when Sub-Lieutenant R.H. Wellings was borrowed from HMS *Scout* at Tupman’s request, filling in a role at the Waimea sub-station originally to have been taken by Noble – tellingly, Wellings is out of uniform.⁶⁷

Elsewhere there is ridiculing of the reverence for crown, country, military and empire expressed by Major James Hay Wodehouse, the British Commissioner. Drawn with an enormous nose, he is dubbed, presumably in ironic response to his desire to be part of their group, “Our British Colleague”. He was often keen to be with them, whether presenting them to the king or throughout the day of the transit. He travelled out with Forbes and Barnacle to Kailua, and his attitude and comments were visualised by Noble from the account provided in letters to Tupman. One drawing at the sub-station is captioned: “Our British Colleague insists on the Professor being under the protection of a Flag: in case of a sudden rising of the natives!”, the exclamation mark echoing Forbes’s opinion that “any disturbance” was “a very unlikely event”.⁶⁸ On the day of the transit, Noble records that “Our British Colleague’s heart expands at the sight of the Guard landed for the protection of British Interests, the Queen’s Service, &c

⁶⁵ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/7>.

⁶⁶ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/31>.

⁶⁷ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/38>.

⁶⁸ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/36>; Forbes to Tupman quoted in M. Chauvin, ‘Astronomy’ (note 4), p. 207.

&c.” – repeating and distancing the group from the language of diplomats and newspaper reports. Noble here depicts the Marines from HMS *Scout* marching in to guard the compound on transit day: Wodehouse surveys them proudly, while the Honolulu observers – most ostentatiously, Noble, the Marine who would soon be back to drill – smoke on the veranda with their backs turned.⁶⁹ Finally, as the observers leave on HMS *Reindeer*, a drawing represents the “Sad condition of our ‘Colleague’.” He bemoans the fact that now “The flag is unrepresented & British Interests are sacrificed to the Tr: of Venus &c &c...”⁷⁰ Despite all their obvious connections to the representation of British interest in the Sandwich Islands, the repeated “&c” captures Noble’s stance of indifference.

4.2 Framing others: natives, women and locals

Many of the caricatures are framed around annoyances, which included rain, problems with instruments, mosquitoes, and other people. A particular complaint focused on expectations that the observers should waste time entertaining visitors. In this Noble’s caricatures echo (or prefigure?) opinions and complaints that appear in Tupman’s journal and letters. Tupman, for example, expressed incredulity that people seemed to believe they were simply there to “satisfy their curiosity” and that the king had suggested that “we should throw open the grounds to the public for a week at a charge of a dollar or so a-head and he would send his Military Band down every day!”⁷¹ Noble visualised the imagined scene of the compound treated as a fairground (Fig. 8). His drawing shows bills posted, money being taken and Tupman beating a drum for the mostly Hawaiian crowds.⁷² Both Tupman’s texts and Noble’s drawings were undoubtedly part of a common discourse amongst the observers that framed their experience and perception of those around them. Letters were surely read by or to the group, commented on, reconfigured by

⁶⁹ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/47>.

⁷⁰ Noble, Album 2, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00002/8>. Wodehouse often expressed such sentiments: Chauvin quotes letters to the Earl of Derby of 1874 and 1875 advising that to counter American interest and to show support for the independence of the Sandwich Islands, the English Naval Flag should be displayed “as frequently as possible” or “constantly”: *Hōkūloa* (note 4), pp. 71, 125.

⁷¹ Tupman to Airy, 13 October 1874, RGO 6/267, quoted in M. Chauvin, ‘Astronomy’ (note 4), p. 200; Honolulu Station Journal (3 October 1874), p. 16, <https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00070/22>.

⁷² Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/27>.

Noble and then recognised and enjoyed by his colleagues as caricatures. Just as Forbes's exploits in Kailua were depicted by Noble, he visualised Johnson's report of his and Wellings's "simply horrible" landing at Waimea, when they neared the beach and "the natives then waded into the surf and carried us in their arms ashore."⁷³ It was too tempting a comic image to pass over, and the memory of imagining and discussing it in Honolulu was as much part of their experience as events witnessed directly.

The drawing that showed the reception of visitors "from a Honolulu point of view" might suggest some sympathy with the perspective of the Hawaiians it depicts. It did not, however, lead to a sympathetic portrayal, and native Hawaiians often appear as idle and uninterested. Contrasting with journalistic claims about their attitudes to astronomy, the drawing captioned "The Model Venus astonishes the natives" shows them looking unconcerned, backs turned. They are shown sitting in trees on the day of the transit but the caption, a quotation from the *Hawaiian Advertiser* ("the audience of an enlightened, expectant Honolulu is sympathetically present"), is ironic. Noble was characteristically dismissive toward Hawaiians but also of excessive claims made by the press.⁷⁴ Elsewhere, Hawaiians are presented as of colourful touristic interest – the group are honoured with a Hula dance and there are various parades relating to the new king's departure and return from a diplomatic visit to the USA – or ridiculous, overweight and unattractive.⁷⁵ The king is seen as something of a nuisance, with official visits required and requests to be shown the instruments. The observers' lack of

⁷³ Letter quoted in M. Chauvin, 'Astronomy' (note 4), p. 210; Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/38>.

⁷⁴ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/29> and <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/50>. The press often presented native peoples as confused or dismayed by astronomical events. On this, and an alternative reading of a non-western use of an eclipse expedition, see David Aubin, 'Eclipse Politics in France and Thailand, 1868', in *The Heavens on Earth: Observatories and Astronomy in Nineteenth-Century Science and Culture*, ed. by David Aubin, Charlotte Bigg, and Heinz Otto Sibum (Durham NC: Duke University Press, 2010), 86-117.

⁷⁵ The Hula is shown in Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/21>. See also e.g. <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/40>, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/64> and <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/66>. On the Hula, and its revival under King Kalakaua see Christopher B. Balme, 'Dressing the Hula: Iconography, Performance and Cultural Identity Formation in Late Nineteenth Century Hawaii', *Paideuma*, 45 (1999), 233–55.

deference is underlined by the suggestion that they showed him the transit model when “Under the influence of 4 or 5 bottles of wine”.⁷⁶

Other groups that are cast as different to the Station B observers were the British and American settler population. Primarily this was done by suggesting that they were unable to understand the importance and process of the transit expedition and simply wanted to see the instruments or, perhaps, catch a glimpse of the amateur’s favourites, “Saturn’s Rings and Jupiter’s belts”.⁷⁷ Noble’s caricatures of the day that the public were invited into the compound prefigure the H.E. Bateman trope of social shock being caused by “the man who...”, with laughter at “The gent who wants to Know if ‘You can see the whole of a Star in that ‘ere instrument’”, and “The lady who wants to know the focal length of the Photoheliograph” (Fig. 9). Unbecomingly well-informed about astronomy, the lady is, in a style reminiscent of *Punch*’s depiction of intellectual and campaigning women, depicted as stiff and unattractive.⁷⁸ Similar, if even more unflattering, treatment was meted out to two women who were evidently among the many missionaries on the islands. They are captioned as “the people whose ‘belief is that the exceptionally clear day on the 8th was directly due to the Efficacy of prayer’!”. This refers to the claim made in a letter to a newspaper, which is pasted onto the opposite page and probably gave the observers much amusement.⁷⁹

These unattractive females are in stark contrast with others taking an approved, feminine role within Honolulu society. Again echoing *Punch* and *Graphic* iconography, they are smooth-skinned, fair-featured and drawing room-based. Intriguingly, Tupman seems to have taken time out of the constant work of the observatory to go courting. In a caption that presumably quotes a genuine comment, he is “A ‘most dangerous man’” as he heads to town, dressed smartly with

⁷⁶ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/29>.

⁷⁷ Tupman to Airy, 13 October 1874 (RGO 6/267) quoted in M. Chauvin, ‘Astronomy’ (note 4), p. 200.

⁷⁸ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/40>. See Constance Rover, *The Punch Book of Women’s Rights* (South Brunswick, NJ: A.S. Barnes, 1970) and “The Lady of Scientific Habits” composite caricature discussed in J. Secord (note 19), pp. 164-5, 183.

⁷⁹ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/47> and <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/46>.

top hat, cane and twirling mustachios, to sit on a sofa with a young lady. Elsewhere he refuses the entreaties of a bevy of maidens to sing. They easily persuaded him, however, as he later appears on the stage of the Young Men's Christian Association, accompanied by a woman on piano.⁸⁰ That this image appears twice, once within the chronology on a typical multi-image sheet, and once on a sheet to itself, inserted (though not pasted) at the front of the first album, as if forming a dedication to Tupman, suggests that he was not unhappy to be portrayed as this image of civilised and urbane masculinity.⁸¹ Certainly his private journal indicates his enjoyment of female company and, while in Honolulu, he recorded, among other things, his “very last duet with Carrie” and “Little Miss Buckman's very pretty feet!”⁸²

If the Station B observers successfully differentiated themselves from women, locals, officials and other military officers, perhaps their nearest potential rival to authority over the transit and its observation was the man termed “our Local Astronomer”. This was David Flitner, who made observations in Honolulu to rate chronometers, which he also sold, and observed the transit of Venus at Waikīkī. He had acquired a telescope, used for time determination, from a Yale College professor, Chester Smith Lyman, who had spend time in Honolulu for his health in the 1840s and taken it upon himself to determined its longitude. Tupman was keen to connect the longitudes of the three Station B observing sites with that of Flitner's observatory and the government's on-going trigonometrical survey.⁸³ This, however, was about trusting Lyman's observations, rather than Flitner's and, despite the pretensions to “astronomer”, he is treated as an artisan in Noble's drawings, with an obviously commercial premises. This was portrayed in a

⁸⁰ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/60>. Noble, Album 2, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00002/3> and <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00002/5>.

⁸¹ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/5>. The YMCA concert was one of many occasions – dinners, lectures and dances – that the observers attended. On eclipse expeditions as social and touristic occasions, see Alex Soojung-Kim Pang, ‘The Social Event of the Season: Solar Eclipse Expeditions and Victorian Culture’, *Isis*, 84 (1993), 252–77.

⁸² G.L. Tupman, Private Journal (private collection), 19 March 1875, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/5> and 27 January 1875, <https://cudl.lib.cam.ac.uk/view/MS-TUPMAN-00001/16>.

⁸³ M. Chauvin, ‘Astronomy’ (note 4), pp. 202-3. They also connected the survey to the site of another set of longitude-determining observations, made by a French lieutenant, M.G. Fleuriais, in 1868, *ibid*, pp. 204-5. Gaining more accurate positional measurements was a very significant by-product of the transit of Venus expeditions: see, G. Forbes (note 6), pp. 77-8, 94.

drawing of Tupman and Nichol borrowing some chronometers for the time-consuming runs used to link the islands' longitudes. While this was undoubtedly extremely useful, Flitner was also seen as a time-waster with an amusingly uncultured accent. As they are busy packing up the observing site, for example: "Enter our Local Astronomer. 'I shant stop long, Capen, & must apawlpgeize for taking up yer valuable time, &c' &c: he stops for 2 ¼ hours". Tupman rushes away, hand to his head, as Flitner talks on.⁸⁴

4.3 *Scientific men*

David Aubin has suggested that eclipse expeditions were "propitious to the striking of friendships", events that "tightened the bonds of an emerging international solar physics."⁸⁵ The men of Station B developed no such lasting bond and, apart from Tupman, were not contributors to an on-going project. The friendships were created but they went their separate ways. Rather poignantly, the final image in the album imagines the seven observers on their disparate future paths (Fig. 10). Tupman appears at a high desk, heroically computing at Greenwich.⁸⁶ Forbes, in a sledge and smoking a pipe, carries out his epic return journey across the Gobi and Siberia, the caption a nod to a recently published adventure story: "Round the World in (more than) 80 days". Ramsden appears on the deck of a ship, watching a sounding machine worked by sailors, described as "A short course at 'Si vis pacem Par bellum'" (If you want peace, prepare for war – the motto of the Royal Navy). Noble, minus beard, is "To the 'same old nip'", in uniform and on the parade ground. Nichol is "Away down to Edinburgh", greeted by a kilted figure at the Royal Observatory there. Johnson has (re)turned to Irish politics and "stands for Tiperary [sic.] in Home rule interest", posters on his platform declaring "Vote for Johnson" and "Ireland for the Irish". Finally, Barnacle sits with a rapt look, quill in hand, a

⁸⁴ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/51> and <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/67>.

⁸⁵ D. Aubin (note 74), p. 89. See also A. Pang (note 45)

⁸⁶ Noble, Album 2, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00002/22>. Airy commended the "disinterested zeal – I may call it heroic – with which [Tupman] had laboured to bring the work to that point.", G. Airy (note 7), p. vi.

globe and telescope in the background: “completes his great work on Astronomy & composes a new Oratorio”. It is the officers, it seems, who are set to the least heroic work.

There is no sense that a scientific persona was, for Noble, a permanent adoption. Unlike Nichol, Tupman, Johnson, Forbes and even Barnacle, he and Ramsden were never made Fellows of the Royal Astronomical Society. Unlike Tupman, they did not observe the 1882 transit or make further published observations. But this persona was adopted throughout the caricatures, not only differentiating the observers from other servicemen and lay people, but also by presenting an insiders’ view of the role that is differentiated from that presented in the press. There is an emphasis on the lowly nature of work as “screw cleaners”, “plate wipers” and slide grinders, not to mention the unpleasantness of getting up for night observation and the mind-numbing nature of endless reductions (see Fig. 11).⁸⁷ They are all in this together, sympathising with Tupman’s anxieties of rusty equipment, the “Heart-breaking clock rate”, the “Wobbling collimation” and the “Eccentric spider wire”. All four Honolulu observers join together in relief once the final, long series of repetitive and unglamorous collimation observations is completed for “The Astronomers’ Chorus” of 8 February 1875: ““We’ve no Night Work to do-o-o’ &c (Wild dance -- exeunt).” (Fig. 12).⁸⁸

Irritations, frustrations and dangers could, of course, achieve some sort of catharsis through humour and visualisation. However, part of being ‘in the know’ also included being able to laugh about the difference between perception and reality.⁸⁹ There is a strain of bathetic humour created by contrasting the heightened language of popular texts with an image that undercut it. In one scene, the caption adapts text from Edmund Paulin Dubois’ book, *Les passages de*

⁸⁷ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/26>, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/25> and <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/44>.

⁸⁸ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/41> and <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/62>.

⁸⁹ This gap between perception and reality is at the heart of the discussion of satire, irony and science in J. Paradis (note 13). While it could be used by outsiders to question the large claims of science, it was also key to scientific in-jokes.

Vénus: “que d’intrepides explorateurs des régions celestes aillent sous des climats meurtriers, comme Honolulu &c, tomber peut-être victimes de leur ardent amour de la Science &c!” The drawing shows the observers having drinks, relaxing on the veranda.⁹⁰ This approach is used to great effect to cover the crucial day (Fig. 13). Noble selected phrases from the *Hawaiian Advertiser* as captions for images of each observer at their station. Tupman is “The indefatigable chief gazing heaven-wards thro’ a tele-spectroscope”; Ramsden “makes vigilant preparations with a photoheliograph to picture the path of the planet across the burning field of the Sun”. This is undermined by the images and fabricated quotations below: Nichol, one arm and leg outstretched to express surprise, “exclaims ‘gude gracious!’” and Noble “remarks ‘I’m blowed if I see it’”. On the next page, “One of the ‘4, thoughtful, studious men’ being a little nervous, blows a cloud between External and Internal Contact to compose his feelings”. This is Noble, supine and looking supremely relaxed, contrasting with Ramsden, in the next image, who shows distinctly visible “supressed emotion” on seeing problems with the photographic plate.⁹¹ All the observers, in the end, were caught out by what they saw during the transit, which did not resemble the practice model.⁹² They had, though, performed their roles and, while laughing at the uninformed, florid account, could be satisfied regarding their own place in history.

The “four thoughtful studious men”, soubriquet evidently tickled Noble, who applied it to himself on transit day and, later, to describe himself, Ramsden and Nichol in contrast to Flitner.⁹³ It suggested the successful performance of his adopted role, that could hardly be an accurate depiction of men elsewhere shown falling off horses, dancing a fling, being plagued by mosquitoes, swinging from the flagpole and hunting nuisance cats. In the end, being there and sticking to their dull yet anxious tasks was sufficient. Amongst themselves, scientific men were

⁹⁰ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/33>. In the original, this passage refers to various 18th-century observers rather than Honolulu: Edmond Dubois, *Les Passages de Vénus sur le Disque Solaire* (Paris: Gauthier-Villars, 1873), p. 2.

⁹¹ Noble, Album 1, from <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/48> to 50.

⁹² See G. Airy (note 7), pp. 44, 46, 59, 63. The photographic efforts were such a failure that it was considered “unnecessary to record” the results in detail, *ibid*, Appendix 5.

⁹³ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/54>.

more likely to emphasise the heroism of dedication in the face of discomfort and endless repetition than the flashier daring-do kind of heroism.⁹⁴ Indeed, there was a self-denying heroism to be found in turning away from or underplaying opportunities for more physical and spectacular exploits: the martyrdom of surrendering the will to the drudgery of routine was an acceptable form of scientific heroism.⁹⁵ Noble earned his (temporary) scientific stripes less for observing the transit of Venus on 8 December 1874, than for carrying out the hundreds of routine observations and calculations required to support the results. Through his inclusion of these in his caricatures, he showed his understanding of their importance relative to the unique observation of the transit.

This is underscored by the fact that one of the seven Station B observers did not, ultimately, earn a place within the group. This was Barnacle, who caused consternation with his poor work and behaviour and was sent home as quickly as possible after the transit. From the beginning his work had been unsatisfactory: it was recorded as such by Tupman in Greenwich and by Forbes in Honolulu. Tupman later noted that they had found that Barnacle's "conduct at Honolulu was so extraordinary, we, and I may say the entire community, thought that he had gone out of his mind."⁹⁶ Tupman made the same point in letters to Airy and his own journal, saying "he is no manner of use here and brings daily fresh discredit on the expedition".⁹⁷ It is difficult to know exactly the nature of Barnacle's transgressions, and why he "thoroughly disgusted" the other observers. There was, certainly, his poor work and some trying behaviour, such as "playing the

⁹⁴ Among Lane's explorer-observers of Mars, one admitted to a colleague that in choosing science over sentiment he had forgone "A little of the romance of mountain climbing", while all negotiated the line between heroic self-presentation and possible "loss of legitimacy as other scientists began to perceive the overindulgent hero as little more than a popular or sensationalist figure". K. Lane (note 61), pp. 112, 115.

⁹⁵ On objectivity as self-sacrifice and a moral ideal see P. Galison and L. Daston (note 47) and Lorraine Daston and Peter Galison, 'The Image of Objectivity', *Representations* 40 (1992), 81-128. On self-abnegation as objectivity, disinterest and morality, see George Levine, *Dying to Know: Scientific Epistemology and Narrative in Victorian England* (Chicago: University of Chicago Press, 2002).

⁹⁶ Tupman, Home Journal 2, 28 Feb 1874, <https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00056-00002/30> (note at <https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00069/13>); Forbes, Kailua Journal (5-7 October 1874), <https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00069/12>.

⁹⁷ Tupman, Honolulu Journal, 11 Jan 1875, <https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00070/93>.

same tune over and over again on the pianoforte”.⁹⁸ However, when Tupman told Airy that Barnacle was “either mad or the greatest impostor that ever lived”, it appears the problem was his refusal to accept his inadequacies. Tupman regretted that he had trusted too much to “his own account of himself”.⁹⁹ Noble’s final caricature supports this interpretation, showing deluded belief that he could compose great works. Elsewhere the drawings show that Barnacle began as a group member but was later excluded, particularly from drawings that show work being performed.¹⁰⁰ As he left, Noble drew a cross-looking Barnacle, who “retires from the scene: resolving not to join the Exp^{tn} of 82 unless ‘tis on a different footing altogether”, scattering elementary textbooks, including Loomis. Again this suggests his overinflated sense of his abilities and expectations regarding his position and work. It contrasts with the neighbouring picture that shows Noble, in early 1875, reworking October’s reductions and discovering an error.¹⁰¹ He aimed to show that he could subsume his efforts into the unglamorous business necessary to the expedition’s success; Barnacle would not.

5. Conclusion

Noble’s albums are an exceptionally rich, and unexpected, source that could be mined in a number of ways. Happily, digitisation opens them up to scholars who may be interested in these informal depictions of science, travel, Hawai‘i and much else. This article is an attempt to read them broadly, as an individual’s representation of a group of astronomical observers on expedition, briefly united around a common project. The number of drawings means that many more examples could have been pulled out, and that the content is not always consistent. In some ways they tell us little that we did not already know, or could assume, about the transit of

⁹⁸ Tupman to Airy, 6 Nov 1875, RGO 6/270, file 7, f. 303, quoted in M. Chauvin, *Hōkūloa* (note 4), p. 132; Tupman, Honolulu Journal, 1 Nov 1874, <https://cudl.lib.cam.ac.uk/view/MS-RGO-00059-00070/45>.

⁹⁹ Tupman to Airy, 10 Jan 1875, RGO 6/270, f. 257 and 6 Nov 1875, RGO 6/270, file 7, f. 303, quoted in M. Chauvin, *Hōkūloa* (note 4), p. 132. See also pp. 121-2, 129-32. On return, Barnacle failed to gain references from Tupman or Airy to support applications for teaching positions. He returned to Cambridge, took Holy Orders and became a Vicar in Cheshire and then a Rector in Australia. See *Monthly Notices of the RAS* 99 (1939), 298, although this wrongly states that he had been on the staff of the Royal Observatory.

¹⁰⁰ Where he does appear, after the Honolulu arrival he has his back to the others (Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/33>) or is rushing off alone (<https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/32>).

¹⁰¹ Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/52>.

Venus expeditions and astronomy in the field. However, it remains instructive to see their emphasis on the transport of instruments, the detailed processes of mounting and stabilising instruments and the embodied nature of observing work, not to mention the negotiations between scientific and other personae in the field. They reinforce, too, the visual nature of expeditionary recording and memorialising and the extent to which public, private and semi-private documents and imagery can be shown to be in conversation. Despite a stance of scientific disinterest, the caricatures reveal an imperial gaze and assumptions about the superiority of British civilisation.

What has been less obvious is the extent to which the junior officers who volunteered could become full members of the observing team. While Tupman made all the decisions about who would observe or calculate what on any given day, there was, it seems, little differentiation between officer and civilian volunteers. Treated differently during training, when the officers were together for longer, once overseas they were encouraged by common task and camaraderie to present a unified front. Noble was able to show his understanding of their role as lived by the group on the ground, in distinction to others and the lives imagined for them in the press. He established his own credentials within the group, as Barnacle signally failed to do, through his reflection of the group's conversation, concerns and attitudes, and his ironic engagement with public discourse. Noble used humour both to present unflattering portraits of many outside the group and to undercut potential claims to the heroics of science in the field. This acted as a claim to be 'in the know' and to reveal the group as – despite sometimes appearing ridiculous – men there for serious, collective purpose rather than personal glory. Even exaggerated, potentially effeminate emotional reactions to threats to the expedition, such as 'fainting' with shock when things go wrong, can be read as shorthand for dedication to the expedition's success and a rejection of a more strenuous heroic identity, while depictions of discomforts such as mosquitoes humorously acknowledge what was in fact overcome.

Nevertheless, the observers contributed to the official and media reporting of the expedition and retained a sense of their historic role. Noble did not depict the new monument to Cook, which Major Wodehouse had fundraised and written the inscription for, but all the observers took the chance to see it, and the second album includes a watercolour sketch of the place where Cook was killed.¹⁰² They also took care to secure their work within historic lineage by recording and marking the locations of earlier observations. In recognition of this, Noble imagined monuments raised to his fellow Honolulu observers on the heavy stone piers used to mount their instruments (Fig. 14). They are mock-heroic but acknowledge that the precise position of those piers would remain a matter of astronomical record. The self-mockery underscores the carefully modest sense of significance used to indicate intellectual rather than physical achievement. It was only those like the Station B observers, after many month's observing and computing for the unglamorous business of position-fixing and time-determination, who could truly appreciate the joke of the triumphant 'statue' of Tupman, "that intrepid explorer of the heavens", waving aloft a humble "Clock Stars List".¹⁰³

Figures

All the figures are reproduced courtesy of Cambridge University Library, and the E.J.W. Noble drawings with permission of Charlotte Tupman.

Figure 1: "Station B. leaves Greenwich" (Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/7>).

Figure 2: The Station B Observers (Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/4>).

¹⁰² Noble, Album 2, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00002/21>.

¹⁰³ Noble, Album 2, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/67>.

Figure 3: “Our old friend R. is at it again”, while climbing in Tijuca (Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/12>).

Figure 4: ‘Waiting for Contact at Honolulu’, *Illustrated London News*, based on a drawing by E.J.W. Noble. Clipping annotated with the observers’ names, including Noble (Noble, Album 2, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00002/20>).

Figure 5: “The Captain’s anxiety at seeing a Cocoanut tree visit the transit hut”: left to right are Noble, Nichol, Ramsden and Tupman. (Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/39>).

Figure 6: Photograph from Station B, Honolulu, 1874 (Cambridge University Library, RGO 6/276, <https://cudl.lib.cam.ac.uk/view/MS-RGO-00006-00276/33>).

Figure 7: “The meeting of the Chiefs at Valpo”, and heading to Honolulu on HMS *Scout* (Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/16>).

Figure 8: “Proposed show day at the Observatory” (Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/27>).

Figure 9: Visitors to Station B (Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/40>). Note the detail of the stencilled text on the transit instrument’s pier.

Figure. 10: The future pursuits of the Station B observers (Noble, Album 2, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00002/22>).

Figure 11: “Computing & mosquitoes” and “The screw-cleaners” (Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/26>).

Figure 12: “The Finale” of 8 February 1875 – Ramsden, Noble, Nichol and Tupman perform “The Astronomers’ Chorus” (Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/62>).

Figure 13: Tupman, Ramsden, Nichol and Noble observe the transit of Venus on 8 December 1874 (Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/49>). The only clearly characterised assistant is Major Wodehouse, keeping time for Nichol.

Figure 14: “Our suggestion” for preserving the transit piers (Noble, Album 1, <https://cudl.lib.cam.ac.uk/view/MS-TRANSIT-00001/67>).