

# William Maximilian Lindley: fifth Director of the BAA Variable Star Section

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William Maximilian Lindley, MC, MA, FRAS, AMICE (1891–1972) served as fifth Director of the BAA Variable Star Section from 1939 to 1958. He was an active variable star observer for many years and wrote numerous publications on the observations made by Section members. This paper discusses Lindley's life and work, with a particular focus on his contribution to variable star astronomy.

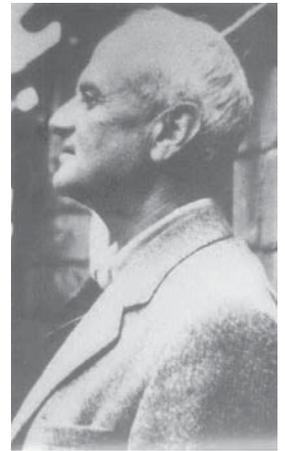


Figure 1. W. M. Lindley, from BAA *Memoir* 42(1), 'The First Fifty Years'.<sup>42</sup>

## Introduction

The British Astronomical Association's Variable Star Section (BAA VSS), launched in 1890, is the world's longest established organisation for the systematic observation of variable stars.<sup>1</sup> William Maximilian Lindley (1891–1972; Figure 1), or Max Lindley as he was usually known, became its fifth Director in 1939 and remained in office until 1958, making him the longest serving VSS Director to date. Prior to this he was VSS Secretary for several years. An engineer by profession, Lindley also served in the Army during both World Wars. He spent most of his life at Trevone, near Padstow, on the north Cornwall coast. Lindley's obituary, written by Gordon Patston (1902–1989) who knew Lindley for nearly 40 years largely through the VSS, was published in the *Journal* in 1973.<sup>2</sup>

## The Lindleys: a family of engineers

Max Lindley was born at Frankfurt-am-Main, Germany, on 1891 July 27. He had two sisters, Julia and Ottelie. His father, Sir William Heerlein Lindley (1853–1917; Figure 2) was a well-known civil engineer who specialised in the design and construction of sanitation systems in cities across Europe.<sup>3</sup> His projects encompassed the construction of water pipelines, sanitation systems and waterworks in some 35 European cities. These included the waterworks in Warsaw, the sewage works in Prague, which were built between 1895 and 1906 and were in use until 1967, and in 1909 he designed the water and sewerage system for Łódź, Poland, although the project wasn't implemented until the 1920s.

However, W. H. Lindley's most ambitious project was the water supply system for Baku in Azerbaijan,<sup>4</sup> which he worked on from 1899 to his death in 1917.<sup>5</sup> Baku was the centre of an oil boom beginning in the 1870s,<sup>6</sup> but the growing city struggled to gain sufficient water supplies for the burgeoning population and outbreaks of cholera were frequent. Having made several visits to the region, W. H. Lindley's proposal was to construct a 110 mile (177km) pipeline to bring water from the Caucasus Mountains. He personally presented his plans to the Baku Duma (or parliament) on 1901 June 23 and was awarded the con-

tract. The audacious project was technically immensely challenging. The pace was slowed by the political instability in Baku which resulted from the revolutionary events in Russia in 1905 to 1907. Nevertheless, the project was duly completed and to this day the pipeline carries water to central Baku. As a mark of gratitude and respect for completing such a monumental project, W. H. Lindley was granted honorary citizenship by the Baku Duma during his last visit to Baku in 1916 January; he died of a stroke in London in 1917 December.

W. H. Lindley's father, William Lindley (1808–1900; Figure 3), was also a famous civil engineer and they worked on several projects together.<sup>7</sup> For example William the father designed the Warsaw waterworks between 1876 and 1878 and his son directed construction between 1881 and 1889. As a young engineer, William Lindley worked with other famous engineers of the age, including Marc Isambard Brunel (1769–1849), the father of Isambard Kingdom Brunel, and Francis Giles (1787–1847).<sup>8</sup>

Early in his career, William was involved with the construction of the Newcastle and Carlisle railway and the London to Southampton railway.<sup>9</sup> In 1834 William went as Giles' assistant to survey the route for the Lübeck to Hamburg railway and in 1838 he was commissioned to build the Hamburg–Bergedorf railway.<sup>10</sup> Hamburg itself was destroyed by fire in May 1842 and William became a member of the committee responsible for rebuilding the city centre. In this role, he

designed a new sewerage system for the city.

In 1860, William moved to Hamburg with his three sons, William Heerlein Lindley, Robert Searles Lindley (born 1854) and Joseph Lindley (born 1859). He was involved in other civil engineering projects, including designing the sewerage system in Frankfurt-am-Main, the city in which Max Lindley was later born. There is a statue of William Lindley in Hamburg (Figure 3) and streets are named after him (*Lindleystraße*) in Hamburg, Warsaw and Frankfurt-am-Main.



Figure 2. Sir William Heerlein Lindley (1853–1917).



**Figure 3.** Statue of William Lindley (1808–1900) in Hamburg.

Thus with his father and grandfather being prominent engineers, it was not surprising that Max Lindley should himself become an engineer, as will be discussed later. Lindley's great-grandfather, Joseph Lindley was, by contrast, an Assistant at the Royal Greenwich Observatory, so perhaps there was a vein of astronomy running in the family too.<sup>2</sup>

## School and university

Max Lindley lived in Frankfurt until the age of fifteen, when he was sent as a boarder from Michaelmas term 1905 to finish his education at Sherborne School in Dorset.<sup>12</sup> There he exhibited strong musical talents, playing the violin and singing in school concerts. He was described in the Sherborne School magazine as 'the best violinist the School has had lately'<sup>13</sup> and in later years became an accomplished violinist.<sup>2</sup> Music developed into a life-long interest and he played the violin in various Quartets throughout his life; he also developed an interest in early polyphonic choral work.<sup>14</sup> While Lindley was at Sherborne he boarded at Harper House which was then run by Thomas Alfred Bell MA, an Exhibitioner of Trinity



**Figure 4.** Harper House at Sherborne School in 1907. Lindley is in the front row, second from left (*image courtesy Rachel Hassall, Sherborne School*).

College Cambridge. Members of Harper House in 1907 can be seen in Figure 4. It was perhaps in connexion with Bell's contacts that Lindley went up to Trinity College Cambridge in 1910 where he read the Engineering Tripos, graduating BA in 1913, later becoming MA and Associate Member of the Institution of Civil Engineers (AMICE).

## First World War service

Max Lindley volunteered for military service immediately the First World War broke out in August 1914, joining the Royal Engineers. He underwent basic training at Biggleswade and took a section of Engineers to the Western Front in November 1914, being gazetted as Second Lieutenant on 1914 December 9.<sup>15</sup> Just before he left England, he married Miss Florence Spencer whom he had known since school teenage days and they remained married until his death – they had no children.<sup>16</sup> As a Brigade Signals Officer, Lindley was involved in setting up communications in the trenches; the part of the Royal Engineers of which he was a member later became the Royal Corps of Signals.<sup>17</sup> Lindley served on the Western Front throughout the war, including at Ypres and the Somme. Although he rarely spoke about his experiences in the trenches, he did describe to his great niece in later years the many occasions he had to leave the trenches and crawl through barbed wire to lay and repair communications wires which allowed people in different parts of the front line to communicate with each other and with headquarters.<sup>14</sup> Although sounding like acts of derring-do to the small girl, this was clearly a very hazardous operation. He was awarded the Military Cross in 1917 and was also mentioned in one of Sir Douglas Haig's despatches. A picture of Lindley taken during the war is shown in Figure 5.



**Figure 5.** Lindley during World War I. (*image courtesy Morwyn Porter*)

Eventually the Armistice was signed and Lindley was demobilised in 1919 with the rank of Captain. He found the whole experience of fighting in the First World War deeply distressing as he knew that it was likely that he was fighting members of his family and his friends: he had lived in Germany until the age of 15 and of course his father and grandfather had lived there for many years, with several family members still residing in the country.<sup>14</sup>

During his time in the trenches Lindley developed a friendship with two members of Robert Falcon Scott's (1868–1912) last expedition to the Antarctic:<sup>18</sup> Sir Charles Seymour Wright



**Figure 6.** Charles Seymour Wright (1887–1975) on 1911 April 13.



**Figure 7.** Raymond Priestley (1886–1974).



**Figure 8.** Frank Debenham (1883–1965) on 1911 September 9.

(1887–1975) and Sir Raymond Priestley (1886–1974). The three had much in common: all served in the Signals and were awarded the Military Cross. Lindley said: ‘C. S. Wright I knew quite well. He often came to me when I was a Brigade Signals Officer – I still have a memento of him in the form of a scrap of paper which he left behind one day – Christmas Day – when he came to my dugout on the Ypres Canal. That was 1915, Ypres’,<sup>19</sup> which, in common with most British soldiers, he referred to as ‘Wipers’.<sup>14</sup>

Wright<sup>20</sup> (Figure 6) was a member of the team that set off with Scott from the base camp at Cape Evans on 1911 November 1 with the intention of reaching the South Pole. However, on 22 December at latitude 85° 15' south, some 500km from the pole, he was in the first supporting party which Scott sent back to base. Later, after Scott failed to return, he joined the 8-man search party, which on 1912 November 12 first spotted the tent containing the bodies of Scott, Edward Wilson and Henry Bowers, who had all perished on their return trek from the South Pole eight months earlier.

Priestley<sup>21</sup> (Figure 7) was in an Antarctic surveying expedition sent forth from the Cape Evans base camp and which on 1911 February 3 encountered Roald Amundsen’s (1872–1928) ship, *Fram*, news of which they reported back to Scott. In late January 1912, during the Antarctic summer, Priestley embarked on another surveying mission, but his party encountered unseasonably bad weather and had to remain in an ice cave for 7 months during the following winter, eking out their 8-week rations with seal and penguin meat. They then endured a five week trek back to Cape Evans, eventually arriving on 1912 November 7, only then learning about Scott’s death. On returning to England, Wright married Priestley’s sister. Priestley was Max Lindley’s Colonel at the time of his demobilisation.

Lindley also met a further member of Scott’s expedition, Frank Debenham<sup>22</sup> (1883–1965; Figure 8) ‘in Stratton’s Rooms at Cambridge’<sup>2</sup> – F. J. M. Stratton (1881–1960; Figure 9) was an astrophysicist who later became Professor of Astrophysics at Cambridge.<sup>23</sup>

## Variable star observations and BAA Variable Star Section Secretary

After Lindley was demobilised in 1919, he joined the British Thomson Houston Co.<sup>24</sup> in their electrical department at Rugby.<sup>25</sup> However, he relinquished the position in 1923 for health reasons (possibly tuberculosis<sup>14</sup>) which led him to live in Switzerland for some time. Returning to England in 1924, he moved to Trevone,

Shears: William Maximilian Lindley near Padstow, Cornwall. His house, Pentonwarra (Figure 10), was his home for the rest of his life and he delighted in living there, devoting his time to his interests, just a few metres from the sea. Over the years he extended the house considerably.

Whilst at Rugby, Lindley joined the BAA, being elected on 1920 January 28. His membership was proposed by two eminent BAA members, Rev T. E. R. Phillips and C. P. Butler. At the time, Rev Theodore Evelyn Reece Phillips (1868–1942) was

Director of the Jupiter Section of the BAA (which he directed from 1900 to 1933) and a recent past President (1914–1916); later he became Director of the Saturn Section from 1935–1940.<sup>26</sup> Although primarily a planetary observer, Phillips also made variable star observations. His 1916 Presidential Address was on the analysis of the lightcurves of long period variables (LPVs). Lindley’s other proposer, Charles Pritchard Butler (1871–1952),<sup>27</sup> was a solar astronomer who worked for a time with Sir Norman Lockyer (1836–1920). Initially Butler was at the Solar Physics laboratory at South Kensington and then moved with it to Cambridge. In 1913 he was acting Director of the Kodaikanal Observatory in India.



**Figure 9.** F. J. M. Stratton (1881–1960) at the Japan solar eclipse of 1936 June.

Lindley became a Fellow of the RAS on 1922 May 12, his membership proposal being witnessed by F. J. M. Stratton, T. E. R. Phillips and J. Jackson.<sup>28</sup> Dr John Jackson (1887–1958),<sup>29</sup> CBE, FRS, a colleague of Stratton, was working at the time at the Royal Greenwich Observatory. He went on to be HM Astronomer at the Cape (South



**Figure 10.** Lindley’s residence, Pentonwarra, Trevone, Cornwall, as it is today. (image: Unique Home Stays, [www.uniquehomestays.com](http://www.uniquehomestays.com))

Africa) between 1933 and his retirement in 1950. He received the Gold Medal of the RAS in 1952 for his work on stellar parallax and proper motions and served as RAS President from 1953 to 1955.

It has not been recorded what stimulated Lindley's interest in variable stars, but his first variable star observation, that of the long period variable (LPV) T Cas, was made on 1921 January 10 and he started contributing observations to the VSS the same year. This was the final year of service of then VSS Director, Charles Lewis Brook (1855–1939),<sup>30</sup> who was Director between 1910 and the end of 1921. In 1922 Félix de Roy (1883–1942; Figure 11) took over as the fourth Director and, since he was resident in Antwerp, Belgium, he appointed A. N. Brown as VSS Secretary, essentially to run the Section on a day to day basis.<sup>31</sup> De Roy organised the first ever VSS meeting on 1922 October 25<sup>32</sup> in the Smoking Library at Sion College, London, which was then the venue for main BAA meetings. The meeting was timed so as to take place just before the Association's AGM and lasted 1 hour. Lindley attended the meeting, along with de Roy and six other members including W. H. Steavenson (1894–1975), Harold Thomson (1874–1962) and E. H. Collinson (1903–1990, Figure 12).<sup>33</sup>



Figure 12. E. H. Collinson (1903–1990).

The BAA VSS database contains some 18,355 observations of 62 stars made by Lindley between 1921 and 1953.<sup>34</sup> Most of the stars were LPVs,<sup>35</sup> which represented the bulk of the VSS target list at the time, although he observed other variables including novae, such as Nova Her 1934 (DQ Her),<sup>36</sup> and dwarf novae. The star he observed most frequently was the dwarf nova SS Cyg, with 1,595 observations. Figure 13 presents Lindley's annual totals of observations and shows that his most productive years were the late 1920s and early 1930s; the year with the highest number of observations was 1927 with a total of 2,499.

Most of Lindley's observations were made with his 5½-inch (140mm) Cooke refractor, supplemented with 2 3/8-inch (60mm) and 0.8-inch (20mm) refractors.<sup>37</sup> Lindley's first *JBAA* paper, published in 1927 May, was on his variable star observing instrumentation.<sup>38</sup> In the paper he noted that the 5½ inch telescope was equipped with a revolving eyepiece holder, made by Cooke, Troughton & Simms, which allowed three eyepieces to be exchanged quickly. He generally preferred Monocentric eyepieces when observing variables as they gave sharper stellar images and a blacker background than the standard Huygenian eyepieces, which sometimes resulted in a gain of half a magnitude in limiting magnitude. The 2 3/8-inch telescope was also constructed by Cooke, Troughton & Simms according to his own specification. The objective was a triplet with a focal length of 9½ inches (240mm), giving a focal ratio of f/4. It was specifically intended for variable star observing and Lindley noted that '[b]oth the light grasp and definition are a very remarkable advance on those of prismatic binoculars'. He generally hand-held the instrument, often from a deckchair, and commented that the wide field of



Figure 11. Félix Eugène Marie de Roy (1883–1942).

view 'yields most beautiful views of the broader aspects of the Galaxy'.<sup>39</sup> The main telescope was housed in an observatory in the garden at Pentonwarra.<sup>40</sup>

The BAA VSS Secretary, A. N. Brown, died suddenly in 1934 November. By that time Lindley was a well known member of the Section and a highly experienced observer, so it was natural for de Roy to appoint him as Brown's successor.<sup>41</sup> He also had the necessary time available as he had not returned to work following his illness in 1924. As Secretary, Lindley was 'to receive at his address all observations of Members of the Section residing in the British Empire', to distribute star charts, to maintain a record of members' original observations and to answer enquiries from new observers. Thus over the next few years, Lindley effectively took over the day to day running of the Section.<sup>42</sup> This allowed de Roy to continue his important work of analysing the results of the Section. De Roy's *magnum opus* was the BAA *Memoir* on the Section's observations of LPVs between 1925 and 1929,<sup>43</sup> published in 1934. This volume has more than 400 pages and contains 59,938 observations of 51 LPVs, but de Roy credited Lindley as having 'taken a large part in the preparation of [the] *Memoir*'.<sup>41</sup> Lindley also contributed towards the cost of publishing it.<sup>44</sup>

At de Roy's request, Lindley also undertook the annual analysis and reporting of four 'irregular' variables covering the years 1927 to 1934, which he published as four papers in the *JBAA*.<sup>45,46,47,48</sup> The stars were U Gem, SS Aur (both now known to be dwarf novae), R CrB and R Sct (a pulsating star of the RV Tau family). In a further paper, Lindley presented a detailed analysis of the times of maxima of 19 LPVs which he undertook by reviewing lightcurves of the stars between 1900 and 1919 based on BAA VSS observations.<sup>49</sup>

Variable star observations crucially depend on the availability of reliable comparison star sequences. It was not uncommon for sequences from different sources to deviate significantly, especially at the fainter end of telescopic variable sequences. The bulk of BAA VSS sequences were based on photometry from the Harvard College Observatory published in 1900, 1902 and 1908 and by the mid 1930s de Roy and Lindley realised that revision, and extension to fainter magnitudes, was necessary. Furthermore some sequences, especially for novae, were derived by visual means by inspection of the field by experienced observers.<sup>50</sup>

The decision was therefore taken to update the VSS sequences with new photometry published at the end of 1935 by Prof Samuel Alfred Mitchell (1874–1960) of the Leander McCormick Observatory at the University of Virginia, USA.<sup>51</sup> Consequently a VSS Chart

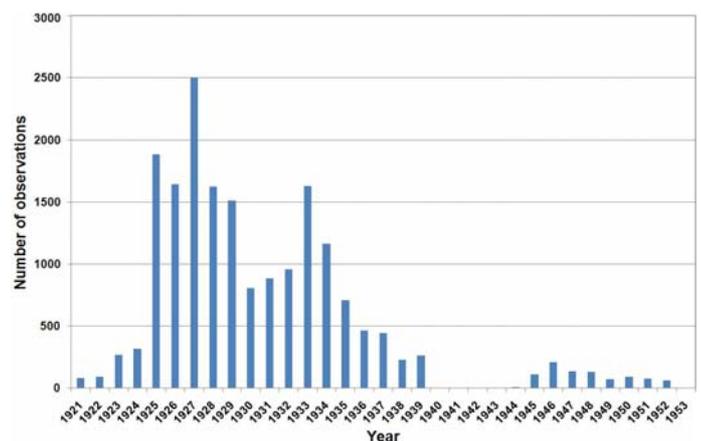


Figure 13. Lindley's variable star observations. (*BAA VSS database*<sup>102</sup>)



**Figure 14.** Delegates at the 1932 IAU meeting in Cambridge, Massachusetts. Lindley is in the back row, 5th from left, with Mrs Lindley on his left. In the front row, left to right, are E. Esclançon (Paris), F. Schlesinger (Yale), F. Dyson (Greenwich), N. E. Nørlund (Copenhagen), G. Abetti (Arcetri), F. J. M. Stratton (Cambridge, England), H. Shapley (Harvard), H. N. Russell (Princeton), A. de la Baume Pluviniol (Paris), J. Bosler (Marseilles), and J. Baillaud (Paris). The astrophysicist G. Lemaître can be seen wearing a dog collar approximately three-quarters of the way from left to right and two-thirds from front to back.<sup>103</sup>

Committee was established to update the charts and sequences, comprising Lindley, Steavenson, Patston, Holborn and Lane Hall.<sup>52</sup> The first of the new draft charts were available by 1938 August and Lindley delighted in showing them to Mitchell at the IAU meeting in Stockholm that month.<sup>53</sup> One thing that slowed the progress of the Chart Committee was sifting through the comparison stars that themselves were suspected of variability, as clearly these needed to be eliminated from the sequences. Of the 62 variable star charts that were to be prepared, Lindley thought that at least 55 of the original comparison stars were themselves variable.<sup>53</sup> Lindley was keen to check that Mitchell's comparison star magnitudes were consistent with what one actually sees in the eyepiece, rather than simply accepting the revised magnitudes at face value.<sup>54</sup>

In early 1932 September Lindley and his wife travelled to the USA to attend the 4th General Assembly of the IAU in Cambridge, Massachusetts, in which de Roy also participated. Whilst there he visited the headquarters of the American Association of Variable Star Observers (AAVSO), which was then located at Harvard College Observatory in Cambridge.<sup>55</sup> There he met the AAVSO's founder, William Tyler Olcott (1873–1936), Leon Campbell (1881–1951), who was Recorder of the AAVSO and with whom he corresponded during subsequent years, and Harlow Shapley (1885–1972), Director of Harvard College Observatory. A photograph of some of the delegates is shown in Figure 14. In later years, Lindley attended further IAU General Assemblies: the 5th in Paris in 1935, the 6th in Stockholm in 1938 as mentioned above and the 9th in Dublin in 1955.<sup>56</sup> Naturally enough, he was especially interested in the discussions at IAU Commission 27 on Variable Stars.

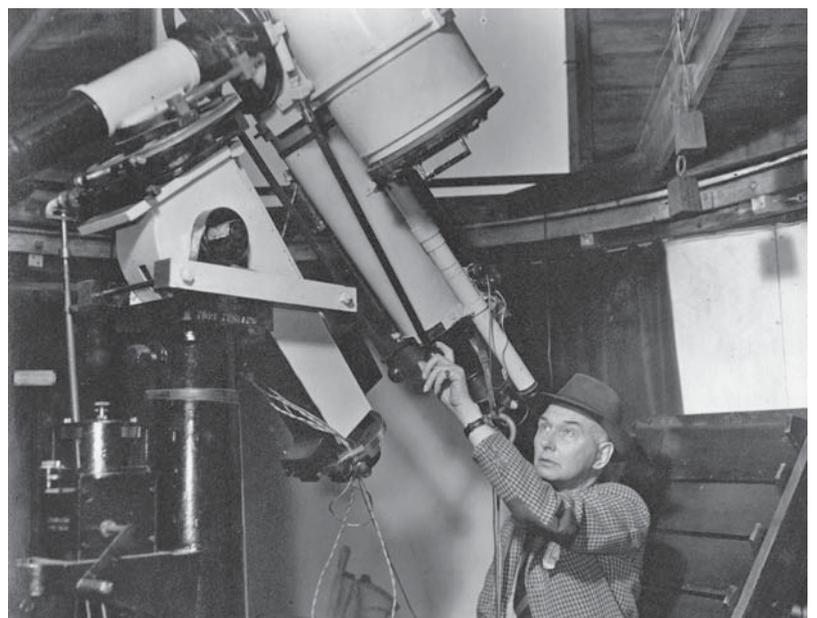
Even before de Roy's and Lindley's visit to AAVSO headquarters, there was already a strong link between the BAA VSS and the AAVSO. Both Charles Lewis Brook

and Félix de Roy had regular correspondence with Campbell. Lindley decided to join the AAVSO more or less as soon as he returned to England<sup>57</sup> and Campbell asked him if he might observe several stars that were on the AAVSO programme, but not the BAA's.<sup>58</sup> Lindley purchased a large batch of AAVSO charts with the aim of comparing with, and updating, the BAA's charts by the Chart Committee.<sup>59</sup> Lindley and Campbell also corresponded on the subject of stars in the fields of known variables, and which had been used as comparison stars, but which BAA VSS members suspected of being themselves variable.<sup>60</sup>

In 1936 Lindley travelled to the Greek island of Chios to observe the total eclipse of the Sun on June 19, along with other members of the BAA. He presented his observations at the 1936 October meeting of the Association in London, noting 'the eclipse was exceedingly well seen and the people of the island had been most hospitable and helpful'.<sup>61</sup> On the same expedition was Dr R. L. (Reggie) Waterfield (1900–1986, Figure 15) who became a good friend of Lindley. Waterfield was Director of the BAA Mars Section from 1932 to 1942 and an accomplished astrophotographer, especially of comets. He was a frequent visitor to Pentonwarra and when later he became confined to a wheelchair as a result of poliomyelitis, he found his stays there quite convenient as much of the property was on a single level. Waterfield shared Lindley's love of music, being an accomplished pianist, and they played together.<sup>14</sup> Waterfield was BAA President from 1954 to 1956.

## Director of the VSS

Félix de Roy was able to devote increasingly less time to the VSS in the late 1930s due to his responsibilities as Editor of an Antwerp



**Figure 15.** Dr R. L. Waterfield (1900–1986) in his observatory at Headley, Surrey.

newspaper, as well as to bouts of poor health. There were also concerns about the looming threat of a new war as events in Hitler's Germany unfolded. De Roy had been ill during the first few months of 1939 and with the outbreak of war in September, contact with him was lost. Lindley placed a special announcement in the 1939 October *Journal* in his capacity of VSS Secretary:

*'As the Director [de Roy], owing to present difficulties in communication, is unable himself to make such a request, the Secretary asks all members of the Section to do their utmost to keep the stars on their programme under observation, so that our long series may not be interrupted. During these years every single observation will be of special value.'*<sup>62</sup>

Given that Lindley had been carrying a large part of the burden of running the Section for several years, he was naturally invited by BAA Council to become the next Director, and this was announced in the 1939 November *Journal*. Lindley stated<sup>63</sup> that he would address three immediate tasks:

- to bring and keep up to date the Interim Reports on the work of the Section;
- to revise the comparison star sequences and the charts; and
- to compile a *Memoir* on Long Period Variables in 1930–1934.

The number of VSS publications had decreased during the later years of de Roy's Directorship and by the mid-1930s very little was appearing in the *Journal*. De Roy had published annual reports in the *JBAA* on LPVs covering the years 1921 to 1930, as well as several on irregular variables, and also the *BAA Memoir* on the Section's observations of LPVs between 1925 and 1929.<sup>64</sup> De Roy had started work on the next *Memoir*, covering LPVs in 1930–1934, as far back as 1936,<sup>52</sup> but little progress had been made by the time Lindley took over as Director. As we have seen, de Roy had requested Lindley to continue the *Journal* series on irregular variables, which continued until 1934. Furthermore de Roy also requested his predecessor as Director, Charles Lewis Brook, to prepare annual publications on the dwarf nova SS Cyg, which continued until 1927.<sup>30</sup> It therefore fell to Lindley to reinvigorate the VSS reporting.

However, there can hardly have been a less opportune time for Lindley to take over as Director. With the commencement of hostilities, Lindley knew it was only a matter of time until he would be called up on active service as he was still on the Reserve of Officers list. He told the BAA President, B. M. Peek (1891–1965), that he would endeavour to maintain the Section correspondence for as long as possible,<sup>65</sup> but it was inevitable that VSS responsibilities would have to take a back seat. Lindley lamented in mid-September 1939 that although he had been looking forward to a busy winter of VSS activities, the onset of war would necessarily restrict these.<sup>65</sup> He pointed out in one of his letters to Leon Campbell that one advantage of the remoteness of his Cornwall residence was that VSS records and other documentation would be relatively safe there from enemy action.<sup>65</sup>

Lindley's call up was not long in coming, his orders arriving at Trevone on 1940 February 8, giving him one

week to make his final preparations for departure, which included informing VSS members.<sup>66</sup> A photograph of Lindley in uniform taken during the war in the garden at Pentonwarra, overlooking the sea, is shown in Figure 16. He was posted to the Royal Corps of Signals camp at Catterick in Yorkshire, where he was responsible for training recruits. Evidently he found the work interesting and he enjoyed walking in the surrounding countryside, including the moors and dales. He maintained correspondence with VSS members from his Catterick base, and even undertook some variable star observations whilst there. In a letter to his good friend and fellow variable star enthusiast, E. H. Collinson in 1940 March, he commented on the importance of his hobby to him:<sup>67</sup>

*'What a sensible entertainment this astronomy of ours is to be sure. Present circumstances and occupations bring that out very clearly. I suppose however we might quite rightly say that we are fighting for an opportunity of continuing with peaceful observation. What a mess we have got ourselves into!'*

Later he spent a long time in hospital in Catterick and was invalided out of the army with the rank of Major. He returned home to Trevone, according to his obituary by Patston, 'rather disenchanting'. Lindley himself noted that 'these are not days for people a large proportion of whose lives were spent pre-1914'.<sup>2</sup>

As Colin Munford noted in his review of VSS activities written for the *BAA Memoir* on the Association's second fifty years,<sup>68</sup> the numbers of VSS observations were greatly reduced during the war as so many people were involved in war duties, but some variable star estimates were received from unusual places, such as El Alamein and Mersa Matruh during the Western Desert campaign. Lindley reported that a total of 11,148 observations were submitted to the VSS in 1939, 2,559 were submitted in 1940 and 1,703 for 1941.<sup>69</sup> Following the end of hostilities, there was an increase in observational activity with about 13,000 estimates being submitted to the VSS in 1946. However, the renewed activity was not sustained. Moreover, few Section reports were written, which also gave the impression of a rather moribund Section. Nevertheless during the 1952–'53 session 11 new members joined the VSS.<sup>70</sup>

Lindley's energies in the 1950s were directed towards continuing to update the comparison star se-



Figure 16. Lindley at Pentonwarra during World War II. (image courtesy Morwyn Porter)



Figure 17. F. M. Holborn (1884–1962), with the 12½-inch (317mm) Calver reflector loaned to him by the BAA.<sup>104</sup>

quences on VSS charts and to producing the long awaited *Memoir* on VSS observations of LPVs in the years 1930–1934. He made few of his own variable star observations in the 1950s (Figure 13). The Preface to the *Memoir* was dated by Lindley as 1957 November and the final draft was discussed by VSS members, including Lindley, at the BAA meeting of 1957 November 27.<sup>71</sup> The *Memoir* finally appeared in 1958<sup>72</sup> and contained some 50,000 observations of 51 LPVs made by 38 observers.

To reduce the cost of publication, the *Memoir* was issued on microfilm, with only the Preface being printed.<sup>73</sup> However, this new method of reproduction was not uniformly welcomed by VSS members, some of whom preferred that it should still be printed in its entirety.<sup>74</sup> The small number of copies, and the fact that a microfilm reader was required to view the content, inevitably meant that the *Memoir* did not receive the attention it might otherwise have done. Lindley noted in the Preface that he received considerable assistance in preparing the *Memoir* from other Section members, notably P. Harvey,<sup>75</sup> as well as H. H. Hammond, F. M. Holborn (1884–1962, Figure 17) and G. E. Patston (Figure 20). Lindley appointed P. Harvey and J. Friends as ‘assistant to the Director’ in 1954.<sup>76</sup>

Almost as soon as the *Memoir* was complete, discussions began amongst BAA Council members about the need to find a successor to Lindley as Director, with the aim of reinvigorating the Section. In spite of the completion of the *Memoir*, there was concern amongst VSS membership and some Council members that insufficient attention had been paid to publishing the work of the Section in the *Journal* in recent years and there was a growing feeling that a new Director should be recruited to take this matter forward.

It was not only amongst VS membership that awareness was growing that the VSS had reached a low ebb. Boris V. Kukarkin (1909–1977), President of IAU Commission 27 on variable stars, noted in his report at the 9th IAU General Assembly held in Dublin in 1955 that whilst a number of variable star organisations around the world were doing useful work, the ‘Variable Star Section of the British Astronomical Association was not active at all. Attempts by the President of Commission 27 to start systematic correspondence with any of its leaders were unsuccessful’.<sup>77</sup> This was a strong indictment of the situation that existed in the VSS at the time and must surely have made uncomfortable listening for Lindley who was present at the General Assembly, and must have caused concern amongst the membership that the world’s longest established variable star organisation was apparently in such a sorry state.

Lindley was asked on several occasions to make suggestions as to his successor, but he was reluctant to make any formal proposal. Nevertheless, his personal preference was E. H. Collinson,<sup>78</sup> whom he had known and respected for many years. The main problem was that Collinson was already Director of the Mars Section, a position which he did not wish to relinquish. Collinson was popular with VSS members and he was approached by several people, including G. E. Patston and F. M. Holborn, and asked if he would consider taking on the VSS Directorship, but he politely declined. Patston’s letter to Collinson<sup>79</sup> in 1958 February sums up the sense of urgency to find a new Director:

*‘At the present time I am feeling very far from happy over the poor old VSS and the treatment meted out to its members. I wish with all my heart that you could be prevailed upon to hand your planet [Mars] over to somebody – anybody you like (!) – and take the helm of the VSS if the present helmsman relinquishes it, which I consider far from unlikely.’*

In early 1958 April Lindley himself formally asked Collinson if he could propose Collinson to BAA Council for the position of Director:<sup>80</sup>

*‘May I therefore ask you whether you would agree to my putting your name forward as willing to shoulder this heavy and important burden? My eyes are entirely open as to what I am asking of you and I only do it in the interests of the Section. You have all the necessary qualifications and it is only a question of whether you can find it in yourself to do it. I know no one whom I would rather see in my shoes and of that there is no doubt. And I should of course give you all possible assistance as long as you require it’.*

In reply,<sup>81</sup> Collinson explained that he had given the proposal much thought, but concluded that he simply didn’t have the time to direct two BAA Sections, the VSS and the Mars Section, and in any case much of his time was taken up by professional activities as an Ipswich solicitor and by family responsibilities. Collinson suggested that Harvey (who had prepared much of the 1958 VSS Memoir with Lindley) and Andrews should be considered for the post.

E. A. Beet (1904–1997), who was BAA Secretary at the time, visited Pentonwarra to stress the BAA Council’s desire that a new Director should be appointed promptly.<sup>82</sup> At its next meeting, in 1958 April, Council set up a small committee comprising Lindley, Collinson and Holborn to progress the appointment of a new Director.<sup>83</sup>

Holborn, himself a very active and long-standing member of the VSS having joined in 1924,<sup>84</sup> had clear views about the attributes of a future Director:

*‘Also I have said that perfection is unattainable, and that a hot stuff scientist at the head of the VSS is less important than getting things going again quickly, for once observations are published, they are available for scientists to play about with if they want to.’<sup>85</sup>*

Patston held a similar opinion, saying that he preferred that the new Director should not be:

*‘...some splendidly flamboyant youngster... We older members of the VSS who look back with ever increasing nostalgia on days of great activity and greater happiness (greater illusion?) now look for someone mature, of our own age and standing, and experience of Directing.’<sup>79</sup>*

Holborn suggested to Lindley that R. G. Andrews would make a suitable Director, having first ascertained that Andrews would be interested in the job,<sup>83</sup> but initially the idea was rejected by Lindley.<sup>86</sup> Meanwhile some VSS and Council members, still frustrated by the lack of recent VSS publications in the *Journal*, suggested that a group be appointed by Council, with Lindley as convenor, to oversee the preparation of publications of the Section with the aim of bringing them up to date.<sup>87</sup> Lindley viewed this as a challenge to his authority, thereby precipitating his resignation as Director. With Collinson ruling himself out as successor, and there being no other obvious candidate, the committee that had been set up to look into who should become the new Director moved forward with the proposal to appoint Andrews and this was accepted by BAA Council.

Reginald Gordon Andrews (1903–1996, Figure 18) had joined the Association in 1945 and began contributing observations to the VSS soon after. In the Section Report for 1946, Lindley commented positively on the contribution by Andrews of 600 obser-



**Figure 18.** Reginald Gordon Andrews (1903–1996). (image courtesy Colin Munford)

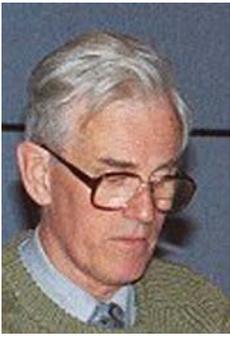


Figure 19. Prof Jeremy Tatum.

vations made with a 2½ inch (65mm) refractor from his home in Sussex.<sup>88</sup> Thus Andrews had the necessary practical experience in variable stars to take on the Directorship. Andrews stayed at Lindley's residence for six days to learn the responsibilities of being Director, after which he commented:<sup>89</sup>

*'I feel I have a good grasp of what the job entails. It now remains to harness the motive power to the machinery!'*

Andrews immediately set about preparing reports for publication and the first of 33 Section reports appeared in the *Journal* in 1959. Colin Munford noted that '[t]his hard work and enthusiasm attracted observers and the Section steadily grew in numbers and observations reported'.<sup>88</sup> Andrews continued in office until 1964 when he resigned following a dispute with BAA Council about the publication of VSS reports in the *Journal*.<sup>90</sup>

After Lindley had handed over the reins to Andrews, he 'generously presented his entire library including the *B[onner] D[urchmusterung] Catalogue* and charts, atlases and Harvard volumes to the Association'.<sup>2</sup>

On a more positive note, Lindley launched at least one person on a future astronomical career. Prof Jeremy Tatum (Figure 19, retired Professor of Physics and Astronomy at the University of Victoria, British Columbia, Canada) lived in Trevone as a boy, and:

*'...one evening (probably aged 13 [probably in 1948]) I happened to notice a very bright star, and, out of idle curiosity I looked at it through my father's binoculars. To my astonishment I saw that it was accompanied by four satellites in a straight line... My parents said that there was an astronomer living in a house overlooking the beach, and I should go down and tell him about it. That was Mr Lindley, and my life's course was determined from that day. Mr Lindley told me that it was in fact Jupiter<sup>91</sup>... and he started telling me all sorts of exciting things about astronomy. He even showed me his huge (all five-and-a half inches of it) telescope at the bottom of his garden, and he asked me if I would like to look through it at night. You just cannot begin to imagine my excitement when I first looked through a telescope.'*<sup>92</sup>

A friendship soon developed as Tatum visited Lindley on a daily and nightly basis. Lindley told him about his astronomical heroes, William Herschel and F. W. Argelander; they listened to classical music records together,<sup>93</sup> and took frequent walks. They looked at many objects through Lindley's telescope, including some variable stars, although Tatum was not bitten by the variable star bug.<sup>94</sup> Tatum also recalls at least one of Waterfield's visits to Pentonwarra.<sup>95</sup> As Tatum's interest in astronomy grew:

*'Mr Lindley lent me many astronomy books to read. I would usually devour them in a few days and then go back and ask to borrow more. I suppose it eventually reached the stage when I was becoming a bit too enthusiastic, so he lent me Smart's Spherical Astronomy, presumably to shut me up. When I opened it up, I saw that it was full of sines and cosines, which I had heard about in school, but wasn't in the least interested in – until I opened that book and found that astronomers actually used sines and cosines. I was fascinated, and immediately sines and cosines became a focus of intense interest! It took me more than a few days to finish that book, but I can assure you that I read it from cover to cover, and I still refer to it from time to time.'*

Lindley ended up giving the young Tatum several astronomy books, including Barnard's *Photographic Atlas of Selected Regions of the Milky Way*,<sup>96</sup> the *Collected Works and Correspondence of Sir William Herschel* and a biography of Sir Arthur Eddington.<sup>97</sup> Tatum's life course was thus set:

*'It was during my acquaintance with Mr Lindley that I decided that I was going to be an astronomer. Nobody took me seriously. It was all very well to keep astronomy as a hobby, but what was I going to \*do\*? Even Mr Lindley warned me that I'd have to be very good at maths. Very well, then, if that's what it meant, I would be very good at maths. Whatever it took, but I was going to be an astronomer.'*

Tatum went on to take a degree in physics at the University of Bristol (1957) and a PhD from the University of London (1960). He recalls fondly the encouragement he received from Lindley and notes that:

*'Mr Lindley was a rare and old-fashioned type. Some might have called him 'posh', not in any derogatory sense, but only to recognise that he was an exceptionally well-spoken and cultured gentleman of the old school. When one of the old cottagers fell ill, Mr Lindley would walk regularly the full length of the village (i.e. not just when he happened to be passing) to inquire with great sincerity how old Mr Tresomebody was.'*

Although Lindley might not have achieved all he had set out to do when he became Director in terms of preparing publications on VSS observations, partly due to disruption caused by war service, he was nevertheless welcoming towards new variable star observers who contacted him. One such was Colin Munford<sup>98</sup> (Figure 20) who joined the VSS in 1953. Munford recalls receiving four letters from Lindley, which were very encouraging to the new variable star observer and contained constructive criticism of his early results along with detailed advice, which was highly appreciated by Munford, allowing him to improve his observations<sup>99</sup> and to become a very productive observer over a period of many years.



Figure 20. Gordon Patston (left) and Colin Munford (right) in 1971. (image courtesy Colin Munford)

Gordon Patston had a similar experience when he was taking his first steps in observing variable stars in 1934. He contacted Lindley who was then in his first year as VSS Secretary:

*'[Lindley], then always approachable, patient and sympathetic, somehow found time for reams of encouragement and guidance.'*<sup>2</sup>

Patston soon became a very active and reliable member of the VSS, observing with a 12-inch (30cm) Newtonian at his home in Streatham.<sup>100</sup> Patston also had many other pleasant memories of an enthusiastic Lindley during the 1930s:

*'It is good to recall those days, to summon up remembrance of things past: of last minute telegrams, 'Lunch today'; of the 'Catsmeat Club', the unepiphonious name for supper, where tables would late be littered with papers and charts, and where five whole minutes in private conclave with the harassed Secretary was a wonderful concession!; of reply postcards (penny postage then!) scribbled on the way home of something forgotten or of further advice needed. He was truly a wonderful correspondent then.'*<sup>2</sup>

Patston contrasts these pre-Second World War memories of a lively and gregarious Lindley with his later years as Director, clearly

affected by the War and becoming ‘rather disenchanted’.<sup>2</sup> In the post-war years, Lindley became somewhat reclusive and preferred not to venture far from home. He was entirely happy at Pentonwarra, pursuing his lifelong interests of astronomy and music, and enjoyed walking along the coastal cliffs or across the fields into Padstow to do the shopping.<sup>101</sup> One school of thought is that the cause of Lindley’s disenchantment, referred to in Patston’s obituary, was his despondency over man’s inhumanity to man as exemplified by the onset of a second World War, and this might have caused him to become more introspective in later life. As noted above, he was clearly upset by having to fight, as he saw it, his friends and family in the First World War and then he saw the tragedy repeating itself.<sup>14</sup>

However, Lindley should be remembered for his stalwart service to the BAA VSS over a period of several decades as an observer, as an author of reports and papers, as a leading member of the Chart Committee, as Secretary and as Director. And his *magnam opus* will always be his *Memoir* on LPVs. In later years, after his time as Director, Lindley was invited to become President of the BAA, but declined as ‘by now he found the distance too great for frequent attendance and felt he might not do justice to the honour’.<sup>2</sup> He spent the rest of his life with his wife at his beloved Pentonwarra, passing away on 1972 September 2.

## Acknowledgments

I am most grateful for the assistance I have received from many people during the research for this paper. Morwyn Porter, Lindley’s great niece, Colin Munford, a long-standing member of the BAA VSS, and Professor Jeremy Tatum, who as a boy lived near Lindley, kindly provided their firsthand knowledge of Lindley’s life, character and activities. Richard McKim was helpful in many matters, especially concerning details of the history of the Association, as well as providing copies of correspondence between E. H. Collinson & R. G. Andrews, F. M. Holborn & Gordon Patston. Both Colin Munford and Richard McKim kindly commented on a draft of this paper. Mike Saladyga (AAVSO) provided copies of letters between Lindley and Leon Campbell & William Tyler Olcott from the AAVSO archives.

Roger Pickard provided details of Lindley’s BAA VSS observations from the VSS database as well as a copy of the Preface to Lindley’s *Memoir* on LPVs; he also answered numerous enquiries from me regarding various historical details of the VSS. Rachel Hassall (Archivist, Sherborne School) searched the Sherborne School archives and provided information on Lindley’s school days, including copies of the School magazine and photographs. Claire Ray of Unique Home Stays ([www.uniquehomestays.com](http://www.uniquehomestays.com)), the company which lets Pentonwarra, Lindley’s home for most of his life, gave me permission to use the photograph of Pentonwarra and also put me in touch with Morwyn Porter.

Sheridan Williams reduced the number of trips that I needed to make to the RAS Library in London to consult back numbers of BAA *Journals*, by diligently scanning the *Journals* and making them available online to Members (a truly wonderful resource) – and he fast-tracked the availability of some specific editions to assist my research. Richard Baum provided encouragement to pursue this research and guidance on how to weigh the importance of different historical perspectives by considering how matters were viewed at the time that they actually happened, not just from the present perspective. He also provided insight into a

number of matters concerning the history of the VSS, as did Storm Dunlop, John Toone and John Isles. Peter Hingley (Librarian, RAS) looked after me on numerous visits to the RAS Library and provided details of Lindley’s RAS Fellowship application.

This research also made use of the NASA/Smithsonian Astrophysics Data System.

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## References and notes

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- Patston G. E., *J. Brit. Astron. Assoc.*, **83**, 201–203 (1973)
- [http://en.wikipedia.org/wiki/William\\_Heerlein\\_Lindley](http://en.wikipedia.org/wiki/William_Heerlein_Lindley)
- At the time Baku was part of the Russian Empire.
- Zelichowsky R., ‘Water – Not a Drop to Drink; How Baku got its water – the British link – William H. Lindley’, *Azerbaijan International*, Summer 2002. Available online at [http://azer.com/aiweb/categories/magazine/ai102\\_folder/102\\_articles/102\\_shollar\\_zelichowski.html](http://azer.com/aiweb/categories/magazine/ai102_folder/102_articles/102_shollar_zelichowski.html)
- Large-scale oil exploration started in Baku in 1872, when Russian imperial authorities auctioned parcels of oil-rich land around Baku to private investors, including the Rothschilds. By the beginning of the 20th century almost half the world’s oil was being extracted in Baku.
- [http://en.wikipedia.org/wiki/William\\_Lindley](http://en.wikipedia.org/wiki/William_Lindley)
- Francis Giles was initially a canal engineer and surveyor and later became a railway engineer.
- Skempton A. W. *et al.*, eds., *Biographical Dictionary of Civil Engineers*, Vol 1, 1500–1830. London: Thomas Telford on behalf of the Institution of Civil Engineers (2002)
- The Hamburg–Bergedorf railway, opened in 1842, is one of the oldest railway lines in Germany and was the first line in Northern Germany.
- William Lindley was asked to design a sewerage system for Sydney, Australia, but turned it down as he had recently been commissioned to proceed with a project in Warsaw and thus did not have time available for the new project.
- Rachel Hassall, School Archivist, Sherborne School, *pers.comm.* (2010)
- The Shirburnian*, 1907 November (magazine of Sherborne School). The article goes on to say ‘Lindley’s playing of a berceuse of Godard’s was excellent. We seemed to see the nymph seeking her soft alluring locks’. References to Lindley’s concert performances also appear in the *Shirburnian* in 1906 July, 1906 November and 1907 June.
- Morwyn Porter, *pers.comm.* (2010). Mrs Porter is Lindley’s great niece and lived in Pentonwarra with Lindley and his wife as a child in the 1940s and ’50s.
- The London Gazette*, 1915 February 12
- Florence died in 1975.
- A Royal Warrant for the creation of a Corps of Signals was signed by the Secretary of State for War, Winston Churchill, on 1920 June 28. Six weeks later, King George V conferred the title of Royal Corps of Signals. The Royal Signals, as it is commonly called, still provides the battlefield communications and information systems essential to all operations of the British Army.
- Sometimes known as the *Terra Nova* Expedition, after Scott’s ship.
- Lindley’s quotation appears in his *JBAA* obituary written by Patston (ref.2) and is from a personal letter from Lindley to Patston.
- Wright, nicknamed ‘Silas’, was born in Toronto, Canada and took a degree in physics from the University of Toronto. Between 1908 and 1910 he did postgraduate research at the Cavendish Laboratory, Cambridge. During WW1 he helped develop trench wireless. Much of his career was spent in the Admiralty Research Department and in the Second World War he was involved in radar development. He was knighted for this work in 1946.
- R. E. Priestley was born in Tewkesbury and later studied geology at what is now Bristol University. After WW1 he conducted research on glaciers at Cambridge and in 1920 founded, together with Antarctic explorer, Frank Debenham, the Scott Polar Research Institute. He held a number of academic and administrative posts in England and Australia, including being Vice-Chancellor of Melbourne and Birmingham Universities. He was knighted in 1949.
- Frank Debenham, OBE, undertook surveying and mapping activities in Antarctica and worked closely with C. S. Wright on this task. After

- WW1 he co-founded the Scott Polar Research Institute with Raymond Priestley\*. In 1931 he was appointed Professor of Geography at Cambridge University. He was Vice-President of the Royal Geographical Society (1951–1953). He did not join Scott's final expedition due to a knee injury sustained in a football match in the snow.
- 23 Frederick John Marrian Stratton, FRS, worked at the Solar Physics Observatory, Cambridge, where he was Assistant Director from 1913 to 1919, then Director from 1928 to 1946, and upon amalgamation with the Cambridge Observatory he became Director of the Combined Observatories from 1946 to 1947. He was Professor of Astrophysics at the University of Cambridge from 1928 to 1947. In 1947 he was made a Fellow of the Royal Society.
  - 24 The British Thomson Houston Company was an electrical engineering company founded in 1894 as the British arm of an American parent, which later became merged into General Electric Inc. (GE).
  - 25 Whilst at British Thomson Houston, Lindley and his wife lived at 26 Park Road, Rugby.
  - 26 Rev T. E. R Phillips' RAS Obituary: *MNRAS*, **103**, 70 (1943)
  - 27 C. P. Butler's RAS Obituary: *ibid.*, **113**, 294 (1953)
  - 28 RAS Fellowship proposal form signed 1922 May 10, elected May 12. Copy kindly provided by Peter Hingley, RAS Librarian.
  - 29 Obituaries of John Jackson: Spencer Jones H., *MNRAS*, **119**, 345–348 (1959), and *MNRASSA*, **17**, 129 (1958)
  - 30 For a description of the life and work of C. L. Brook, see Shears J., *J. Brit. Astron. Assoc.*, **122**(1), 17 (2012)
  - 31 For a description of the life and work of F. de Roy, see Shears J., *ibid.*, **121**(4), 203 (2011)
  - 32 de Roy F., BAA VSS *Circular* 4 (1923)
  - 33 Lindley was absent from the following VSS meeting of 1923 October 31 (de Roy F., BAA VSS *Circular* 6, 1924) as he was convalescing in Switzerland, but he was present at the subsequent one on 1924 November 26 (de Roy F., BAA VSS *Circular* 7). Both were held at Sion College, London.
  - 34 Data from the BAA VSS database. This is likely to be an underestimate as it is believed that not all observations have yet been entered.
  - 35 LPVs are pulsating red giants or supergiants with periods ranging from 30–1000 days. There are two subclasses: Miras (named after Mira Ceti) and Semiregulars.
  - 36 The nova was discovered by J. Manning Prentice, then Director of the BAA Meteor Section, on the night of 1934 December 12. See Prentice J. P. M., *J. Brit. Astron. Assoc.*, **45**, 120 (1935). It peaked 9 days later at mag 1.5. A slow fade followed, with the nova losing 3 mag in 94 days, followed by a more rapid decline of 8 mag in just one month. DQ Her then rebrightened to a second maximum of 6.5, before a slow fade to minimum. Further information about DQ Her, written by Gary Poyner, can be found on the VSS web site at <http://www.britastro.org/vss/00191a.html>, where a light curve can also be viewed.
  - 37 Lindley noted that the 2 3/8" with a power of  $\times 8$  gave a field of view of  $6\frac{1}{2}^\circ$  and the 0.8" a field of view of  $18.5^\circ$  at  $\times 1.75$ .
  - 38 Lindley W. M., *J. Brit. Astron. Assoc.*, **37**, 264–265 (1927)
  - 39 The current whereabouts of Lindley's telescopes in not known to the author, who would be interested to learn from anyone who has any information about them. The pier for the 5½-inch telescope still exists in the garden at Pentonwarra.
  - 40 Morwyn Porter recalls that the observatory had a rotating top with shutters that opened and it appears to have been of the traditional Romsey design.
  - 41 de Roy F., BAA VSS *Circular* 10 (1934)
  - 42 Kelly H. L., 'Variable Star Section', in 'The BAA – The First Fifty Years', *Mem. Brit. Astron. Assoc.*, **42**(1) (1989)
  - 43 de Roy F., *ibid.*, **31** (1934)
  - 44 Report of the BAA meeting of 1929 April 24, *J. Brit. Astron. Assoc.*, **39**, 230 (1929)
  - 45 Lindley W. M., *ibid.*, **44**, 330–336 (1934)
  - 46 Lindley W. M., *ibid.*, **45**, 28–34 (1934)
  - 47 Lindley W. M., *ibid.*, **46**, 182–187 (1936)
  - 48 Lindley W. M., *ibid.*, **49**, 22–28 (1938)
  - 49 Lindley W. M., *ibid.*, **43**, 125–130 (1933)
  - 50 An example is the sequence for HR Lyr (Nova Lyr 1919). Until recently, the AAVSO chart for HR Lyr was in part based on comparison stars whose brightness was determined by visual estimation by W. H. Steavenson.
  - 51 Lindley W. M., *J. Brit. Astron. Assoc.*, **46**, 223–225 (1936)
  - 52 de Roy F., *ibid.*, **46**, 364 (1936)
  - 53 Lindley W. M., Letter to Leon Campbell 1939 May 20, AAVSO Archive
  - 54 Lindley discussed the magnitudes assigned by Mitchell with E. H. Collinson, another experienced BAA VSS observer, in three letters he wrote to Collinson on 1936 February 11, March 7 and March 15.
  - 55 A total solar eclipse took place in 1932 August, which de Roy observed from Maine, USA. I have no record that Lindley observed it, but given the fact that it took place so close in time and distance to the IAU meeting it seems likely that he did. Many observers, including the BAA's R. L. Waterfield, were unable to view the eclipse because of cloud or mist. By contrast, De Roy rode in a helicopter above the mist and had a good view. This is believed to be the first time that a solar eclipse was observed from a helicopter.
  - 56 Lindley attended the 1955 IAU in Dublin in his role as Director of the BAA VSS. Discussions at this IAU led him to conclude that a wider variety of variable stars should be included in the VSS programme, beyond the core of LPVs, such as Flare Stars.
  - 57 Lindley W. M., Letter to William Tyler Olcott (AAVSO), 1932 Nov 8, AAVSO Archive
  - 58 Campbell L., Letter to W. M. Lindley, 1935 Sept 25, AAVSO Archive
  - 59 Lindley W. M., Letter to Leon Campbell, 1939 May 20, AAVSO Archive. In reply Campbell agreed to Lindley's request for 244 copies of charts: Campbell L. C., Letter to Lindley, 1939 June 5, AAVSO Archive
  - 60 Lindley W. M., Letter to Campbell, 1939 May 23; Campbell L. C., Letter to Lindley, 1939 June 8, AAVSO Archive. In addition, Lindley wrote to E. H. Collinson to ask his view on the suspected variability of comparisons in the fields of S Cas, R Cyg and V Cyg; Lindley W. M., Letter to E. H. Collinson, 1938 May 3
  - 61 Lindley W. M., *J. Brit. Astron. Assoc.*, **47**, 15 (1936). From the report of the 1936 October meeting of the BAA
  - 62 Lindley W. M., *ibid.*, **49**, 421 (1939)
  - 63 Lindley W. M., *ibid.*, **50**, 55 (1939)
  - 64 de Roy F., *op. cit.* (ref.43)
  - 65 Lindley W. M., Letter to L. Campbell, 1939 Sept 18, AAVSO Archive
  - 66 Lindley W. M., Letter to E. H. Collinson, 1940 Feb 8
  - 67 Lindley W. M., Letter to E. H. Collinson, 1940 March 26. Sent from Catterick Camp.
  - 68 Munford C. R., 'Variable Star Section' in R. McKim, *ed.*, 'The British Astronomical Association, the second fifty years', *Mem. Brit. Astron. Assoc.*, **42**(2), (1989)
  - 69 Lindley W. M., *J. Brit. Astron. Assoc.*, **52**, 309 (1942). The numbers appear in Lindley's annual report for the VSS for the 1941–42 session submitted to the BAA Council. He issued no annual report in 1940 and 1941 due to being tied up with military service. However, the current BAA database lists 8638, 5742, 1294 for the same years.
  - 70 Lindley W. M., *ibid.*, **63**, 300 (1953)
  - 71 Patston G. E., Letter to E. H. Collinson, 1957 Nov 18
  - 72 Lindley W. M., *Mem. Brit. Astron. Assoc.*, **38** (1958)
  - 73 The *Memoir* contains 53,637 observations. The microfilm comprises 427 frames and each frame presents 2 pages of the manuscript. Copies of the *Memoir* were sent to the BAA Library, the British (Museum) Library, 5 other places in the UK, and 18 overseas including the AAVSO and RASNZ.
  - 74 Holborn F. M., Letter to E. H. Collinson, 1958 March 28. Holborn notes 'I had an idea of replacing these hateful micro-films another time, namely to print 'Memoirs' bit by bit in the *Journal*, a few stars at a time, and have reprints kept and bound into *Memoirs* after a few years.'
  - 75 In his annual report to the BAA Council for the 1957–'58 Session, the new VSS Director R. G. Andrews states 'A *Memoir* on Long-Period Variables observed between 1929 [sic] and 1934 has been compiled, largely the work of P. Harvey', without mentioning Lindley. See Andrews R. G., *J. Brit. Astron. Assoc.*, **68**, 290 (1958). Lindley states in 1954 that 'the *Memoir* is nearing completion under the direction of P. Harvey' (Lindley W. M., *ibid.*, **64**, 342 (1954)), confirming Harvey's key role.
  - 76 Lindley W. M., *ibid.*, **64**, 342 (1954)
  - 77 Kukarkin B. V., *IAUT*, **9**, 368–'85 (1957). Variable star associations mentioned in a positive light included the AAVSO, AFOEV (France), Nordisk Astronomisk Selskab (Scandinavia), RASNZ-VSS (New Zealand), Astronomical Society of South Africa and unspecified groups in Japan and Italy. Note that at this time the AAVSO itself was struggling for survival (see Williams T. R. & Saladyga M., *Advancing Variable Star Astronomy*, Cambridge, 2011 for an account of the AAVSO centennial history).
  - 78 Collinson was President of the BAA from 1952 to 1954 and Director of the Mars Section from 1956 to 1979. He was very active in the VSS both as an observer, and also in writing reports. Further details can be found in his obituaries: McKim R., *J. Brit. Astron. Assoc.*, **101**, 12–14 (1991) and Moore P., *QJRAS*, **32**, 207 (1991).
  - 79 Patston G. E., Letter to E. H. Collinson, 1958 Feb 16
  - 80 Lindley W. M., Letter to E. H. Collinson, 1958 April 2
  - 81 Collinson E. H., Letter to W. M. Lindley, 1958 April 18. This letter exists in draft manuscript amongst the papers left by Collinson. One presumes a fair copy, or typed copy, was actually sent.
  - 82 Holborn F. M., Letter to E. H. Collinson, 1958 April 8
  - 83 Holborn F. M., Letter to E. H. Collinson, 1958 May 1
  - 84 Holborn's obituary can be read at: *QJRAS*, **3**, 354 (1962). He served as BAA Secretary (1939–1946) and President (1946–1948).
  - 85 Holborn F. M., Letter to E. H. Collinson, 1958 May 24
  - 86 Holborn F. M., Letter to E. H. Collinson, 1958 May 24. According to Holborn '[Lindley] finds no one really suitable for the Directorship.

- Still, his objection to Andrews seems be that he thought he was not very fit and too busy'.
- 87 Munford C. R., *pers. comm.* (2011)
- 88 Munford C. R., *J. Brit. Astron. Assoc.*, **107**, 214 (1997). Munford's obituary of Andrews describes how the BAA loaned Andrews a 10-inch (25cm) Calver reflector to further his variable star observations in 1947.
- 89 Andrews R. G., Letter to E. H. Collinson, 1958 July 31
- 90 Munford C. R., *pers. comm.* (2010). The dispute is mentioned in Munford's obituary of Andrews; the nub of the problem was the apparent refusal of the *Journal* editor, F. W. Hyde, to publish all the VSS reports prepared by Andrews. This was ironic as the very thing that Andrews was asked to do when he was appointed Director was to bring the Section publications in the *Journal* up to date. It was because of Hyde's unwillingness to publish this material that Andrews resigned.
- 91 Tatum had consulted *Pears' Cyclopaedia* and discovered that Uranus had four satellites, so he assumed the object must be Uranus. Lindley was soon to put him right!
- 92 Tatum J., *pers. comm.* (2011)
- 93 Lindley had a collection of 33 rpm records, which was still rather a new format (78 rpm records existed before that). Lindley played Mozart's *Clarinet Quintet*, Elgar's *Dream of Gerontius*, Strauss' opera *Die Fledermaus* and pieces by Poulenc (which the young Tatum did not enjoy).
- 94 Tatum comments: 'I was never an active variable star observer, or indeed a serious amateur observer, though Mr Lindley certainly showed me many variable stars, and I still remember to look at the naked eye ones when I get the opportunity... Mr Lindley promised me a present if ever I was not able to see R Coronae Borealis. He showed me the method that he used to make magnitude estimates, by mentally bracketing the variable into tenths between two comparison stars.'
- 95 Tatum recalls that he 'did meet Dr Waterfield while he was visiting Mr Lindley. He was confined to a wheelchair. They were both tickled pink that I, a mere schoolboy, had spotted some trivial mistake in one of Dr Waterfield's books'.
- 96 Tatum took the *Atlas* with him to the University of Victoria where he kept it in the chart room. In a reorganisation the University Library officially took possession of all the charts including the *Atlas*. It was only later that Tatum realised the value of the rare book, but by then it was too late: it had already become official University property. Tatum received a tax receipt for his 'generous donation' and Lindley's book still resides in the University library; Tatum J., *pers. comm.* (2011).
- 97 Sadly, Tatum's father disposed of some of the books that Lindley had given the young Jeremy. This happened whilst Tatum was away at Bristol University, his father assuming that because they were old, and because he would have access to the latest books at the University, he would no longer need them. He still has the 'biography of Eddington by the Canadian astronomer Vibert Douglas. I happened to refer to it recently and I see that it still bears a few small pencilled annotations in it made by Mr Lindley.'
- 98 Colin Munford was awarded the BAA Steavenson Award in 1980 for his contributions to the Variable Star Section, 'both as an observer and as an active administrator'. See *J. Brit. Astron. Assoc.*, **90**, 408 (1980).
- 99 Munford C. R., *pers. comm.* (2010). The first letter Munford received (1953 Aug 24) contained advice on locating a variable, W And; often one of the biggest challenges for a new variable star observer is finding the variable in the first place. Munford also recalls meeting Lindley briefly on two occasions at Burlington House in 1955 or '56. This took place following a Council meeting that Lindley had attended and before the main BAA meeting
- 100 Patston's obituary can be read in the *Journal*: Munford C. R., *J. Brit. Astron. Assoc.*, **100**, 246 (1990). Patston's Streatham Observatory is described in *ibid.*, **50**, 216 (1940). After he retired he moved the observatory to Eastbourne. Patston served as VSS Secretary 1966–1973.
- 101 Jeremy Tatum notes that Lindley 'didn't have a car, so that he'd have to walk to Padstow for the shopping. There was one small shop in the village, and you could get veggies from the farms, but I do know that Mr Lindley often walked to Padstow... [sometimes] along the cliffs via Tregudda Gorge, which was a real, real long walk.'
- 102 Pickard R. D., *pers. comm.*; data from the BAA VSS database (2010)
- 103 The complete photograph, including identifications, can be seen in *Popular Astronomy*, **40**, 453–459 (1932). A higher resolution image is included in Blaauw A., *The History of the IAU*, publ. for the International Astronomical Union by Kluwer (1994).
- 104 Marriott R. A., *J. Brit. Astron. Assoc.*, **116**, 299–305 (2006)

Received 2011 February 06; accepted 2011 March 30

## New members

The British Astronomical Association cordially welcomes the following new members:

### Elected 2011 November 19

**AKERROYD** Michael, Stirling, Scotland  
**ATKINSON** Paul, Dewsbury, W. Yorkshire  
**BALDWIN** Graeme, Wirral, Merseyside  
**BARNSHAW** June, Hatton, Derby  
**BRISCOE** Chris, Goole, N. Yorkshire  
**BRUCKNER** David B., Lancing, W. Sussex  
**CURRIGAN** Colin–Jay, Hadleigh, Essex  
**CUTLER** Robert, Telford, Shropshire  
**FICE** Laura, St Thomas, W. Glamorgan  
**FINCH** Emily Winifred, Beckenham, Kent  
**HALLETT** Heather, Horsham, W. Sussex  
**KERSHAW** John, West Malvern, Worcs.  
**LITTLE** James T., North Queensferry, Fife  
**MARKWICK** Peter, Baughurst, Hants.  
**MCDONNELL** Philip A., Westcliff on Sea, Essex  
**MCDONNELL** Ian C., Westcliff on Sea, Essex  
**MITCHELL** Ian, Plymouth, Devon  
**MOORE** Emily, Norwich, Norfolk  
**O'GORMAN** Sharron Linda, Herefordshire

**O'GORMAN** Charles, Herefordshire  
**PARKIN** Neil, Newport, Wales  
**POPE** David, Chelmsford, Essex  
**POPE** Frances, Chelmsford, Essex  
**PUT** Dennis, Akker Zuid–Holland, Netherlands  
**REDFERN** Cameron, Bay Horse, Lancs.  
**SEMAOUNE** Rachid, London, SW10  
**SMITH** Olvin, Isle of Coll, Argyllshire  
**WONNACOTT** Rachael M., Tonbridge, Kent

### Elected 2011 December 10

**ARISHI** Abduh, Jazan, Saudi Arabia  
**BUCKLAND** Rodney Alan, Culverstone, Kent  
**COBB** William David, Ain, 01170, France  
**DEAN** Stephen, East Cowes, Isle of Wight  
**DONNELLY** Tom, Harpenden, Herts.  
**FERNANDES** Laura, London, W2  
**HASTORF** Chuck, Arizona, USA  
**KILBURN** Kevin John, New Mills, Derbyshire  
**MILLER** Bill, Worksop, Notts.  
**REEVES** Colin, Marlton, Devon  
**SCOTT** Michael, Newmarket, Suffolk  
**SCOTT** Lynne, Newmarket, Suffolk

### Elected 2012 January 25

**AAMODT** Athelstane, Twickenham, Middx.  
**BELDING** Andrew, Southampton, Hants.  
**BOUZYK** Georgina Juliet, Gloucestershire  
**BRACKENRIDGE** Peter, Hackney, London, N1  
**FRANCIS** Derek Robert, Croydon, Surrey  
**GARWOOD** Lance, Chelmsford, Essex  
**JAYAWARDENA** Naveen, Ragama, Sri Lanka  
**LEANING** John Stuart, Scunthorpe, N. Lincs.  
**LYNN** Sam, Woking, Surrey  
**MAAL** Kevin, Bridgend, Mid Glamorgan  
**MEYNELL** Mike, Blackheath, London, SE3  
**NURSE** Kath, Kintbury, Wiltshire  
**SALT** Roger E., Sutton Coldfield, W. Midlands  
**TAYLOR** John, Donkeywood, Northumberland  
**WARWICK** Ian Graham, Bozeat, Northants.  
**WARWICK** Mureen, Bozeat, Northants.  
**WILLIAMS** Jason Barry, Hitchin, Herts.

### Elected 2012 March 28

**BOHAN** Tiernan, Reading, Berks.  
**CHEESEMAN** Michael, Cirencester, Glos.

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