

The 'Leviathan Lord' of Birr Castle

William Parsons, 3rd Earl of Rosse

A 'Catchers Tale'

**Featuring the Forgotten Lives of the Men and Women who
First Photographed the Heavens**



Stefan Hughes

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1. The 'Catchers Tales'

Catchers of the Light

**William Parsons
3rd Earl of Rosse**

**The Forgotten Lives of the Men and Women who First
Photographed the Heavens
Their True Tales of Adventure, Adversity & Triumph**



Stefan Hughes

1.1 Introduction

The '*Catchers Tales*', each feature a single life of one of the men and women who first photographed the heavens. Their lives are ones full of adventure, adversity and triumph - which would test the abilities of even the best author or screenwriter to recreate as a work of fiction. Sadly their names are largely unknown and all but forgotten - confined now to the closed pages of history. Through the '*Catchers Tale*' you are about to read, they come alive once again.

These '*Catchers of the Light*', include the Scottish teacher from Dundee, Williamina Paton Stevens Fleming, who despite being abandoned, pregnant and alone in a strange country, gained employment as the housekeeper to a famous Harvard astronomer, and who became an eminent astronomer in her own right - even naming her son Edward Charles Pickering Fleming after her saviour.

Or of the young boy, Edward Emerson Barnard raised in the slums of Nashville, Tennessee during the American Civil War, and who dared to look up at the stars and dream, amid the cholera and death that surrounded him; and yet survived to capture some of the finest images of the heavens ever taken.

Or of the Irish Lord, William Parsons who married a rich heiress for her money, but in the end found true love, and the time to create a telescope in the grounds of his great estate, which enabled mankind to see for the very first time what the universe truly looked like.

Or of Milton Lasell Humason, who began his life driving mules up a mountain carrying the materials to build a Great Observatory, who then became its Janitor, then its Night Assistant and finally despite having no qualifications and little education - a Staff Astronomer there - working with his famous collaborator Edwin Powell Hubble, who together put a '*yardstick*' on the size of the Universe.

And of the fisherman's son from Estonia, Bernhard Voldemar Schmidt who blew off his right hand as a young boy in an experiment with gunpowder that went horribly wrong, but nevertheless lived to grind - literally single-handedly an optical system which is now aboard a Great Space Telescope, that has been used to find other '*Earths*' orbiting distant stars - and whose sad fate was to be left to die unrecognised and alone in a Lunatic Asylum.

These '*Catchers Tales*' tell their stories and those of the many others who had to overcome misfortune, disease, war, death, Irish Leprechauns and even very unfriendly Cannibal natives before they could even begin to take the even a single photograph.

Each '*Tale*' is divided into four chapters: an Introduction to the '*Catcher*'; a detailed account of their life and work; a series of Appendices covering several topic in more 'depth'; and an 'End Piece' which includes notes and a bibliography, a comprehensive index and acknowledgements and something about the Author.

The Author of the '*Catchers Tales*', Dr. Stefan Hughes has spent ten years researching and writing on the History of Photography, as well as the forty years of experience and expertise needed to even begin this task, in a diverse career as an amateur and professional Astronomer, a qualified Genealogist and a Historian. As a young boy the Author, like Edward Emerson Barnard looked up at the stars and wondered, marvelling at the magnificent photographs he saw in the pages of his books - and especially the iconic '*Horsehead*' nebula, longing to see it in his modest telescope - only to be disappointed. Forty years later he succeeded through the 'eyes' of the modern wonders of the Digital Camera and the GOTO telescope.

1.3 The 'Great Telescope Builder'

William Parsons (1800-1867), the 3rd Earl of Rosse was the '*Great Telescope*' Builder, whose 72-inch Reflector was for almost three quarters of a century the largest telescope in the world. He did something no one else had done before or since - create almost single handedly a telescope of such a size and use it to '*afford us some insight into the construction of the material universe*'.

He made drawings of Deep Space Objects (DSOs) which showed for the very first time what many of them truly looked like. It was he who first discovered with his '*Leviathan of Parsonstown*' the '*Spiral*' nature of certain nebulae; an event which marked a milestone in mankind's quest to understand the Universe in which our Earth is a mere speck in its vast expanse.

The 3rd Earl of Rosse was born into a time when the amateur could and did make invaluable contributions to science. As a man of learning, possessed of a considerable fortune and great estates in both England and Ireland, he was ideally placed to fulfil his *raison d'être* - to build a series of telescopes each larger than the last, so that he might look at the night sky and try to understand what he saw.

In order to do so he had to overcome the many obstacles - technical, logistical and financial of which you will shortly learn. How to raise the great fortune needed to build them?; What type of telescope should he build, should he go with the convention of the day and use lenses, or go back to great mirrored instruments of Sir William Herschel, then considered out dated and impracticable?; How could he construct one of a size larger than any other?; And how would it perform in a country that is renowned for its bad weather. The Irish have a saying about their weather, they have four seasons just like anywhere else, only theirs are all wet!

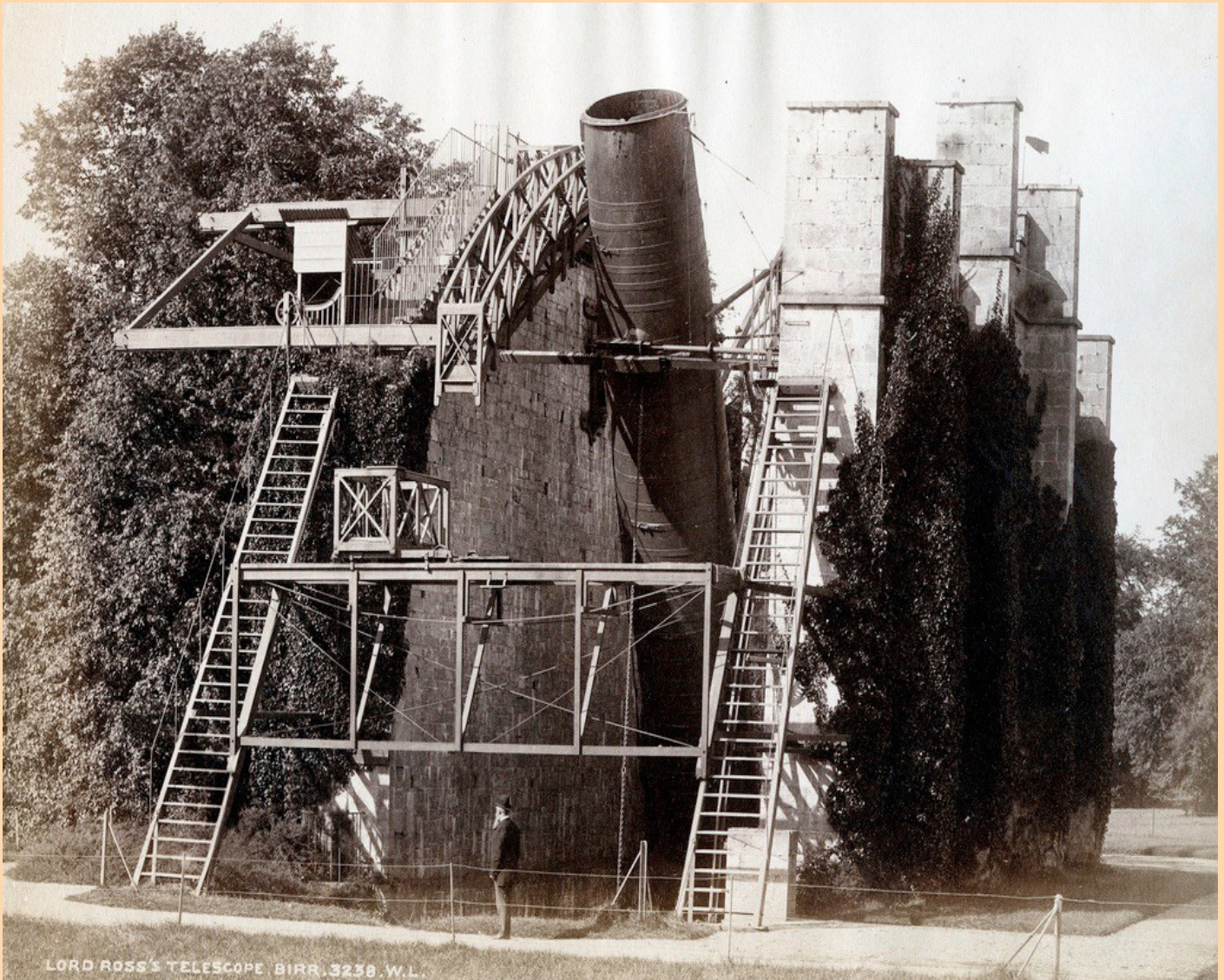
Born of an ancient line, it was his duty and obligation to preserve it - firstly by providing a male heir and not least to obtain the not inconsiderable monies necessary to maintain, and if possible add to the family's landed estates. This he achieved in the time honoured fashion of marrying a rich heiress; preferably one whose father was dead (or soon to be), and thus gaining immediate control of her wealth. The question of love did not in the vast majority of cases warrant even the slightest consideration.

We have now set the scene; and can now begin our true tale of adventure, adversity and triumph, set against a backdrop of a privileged aristocracy, great personal tragedy, famine, scientific breakthroughs and an eventual lingering death.

This is the story of William Parsons, 3rd Earl of Rosse - the '*Leviathan Lord*'.

Stefan Hughes

2. The Life & Works of William Parsons



**The 'Leviathan of Parsonstown', in the 1880s, by Robert French
William Lawrence Collection**

The Lawrence Collection, is one of the most important sources of local Irish history in the years 1870 to 1914. It is named after the entrepreneur William Mervyn Lawrence (1840-1932), who although not a photographer himself realized the enormous potential of the medium for both financial gain and as a legacy for future generations. In 1865 he and his wife Fanny Henrietta Greatbatch had opened a photographic studio in his mother's toy and fancy good shop in Sackville Street, Dublin.

He employed a team of photographers to capture the many and varied parts of Ireland, including the '*Leviathan of Parsonstown*'. The collection consists of 40,000 glass plates, mainly from the period 1880 to 1914, but some plates date back to as early as the 1870. Robert French (1841–1917) was employed as his chief photographer in 1880. He travelled to every county in Ireland taking pictures, with many of them reproduced on postcards and in albums during the late 19th and early 20th century. French took a staggering total of over 30,000 photographs of the '*Lawrence Collection*'. The plates are now housed in the National Library of Ireland.

2.1 'Great Telescopes'

William Parsons (1800-1867), the 3rd Earl of Rosse was born into an age when wealthy amateur scientists could and did make great contributions to our understanding of the universe in which we live.

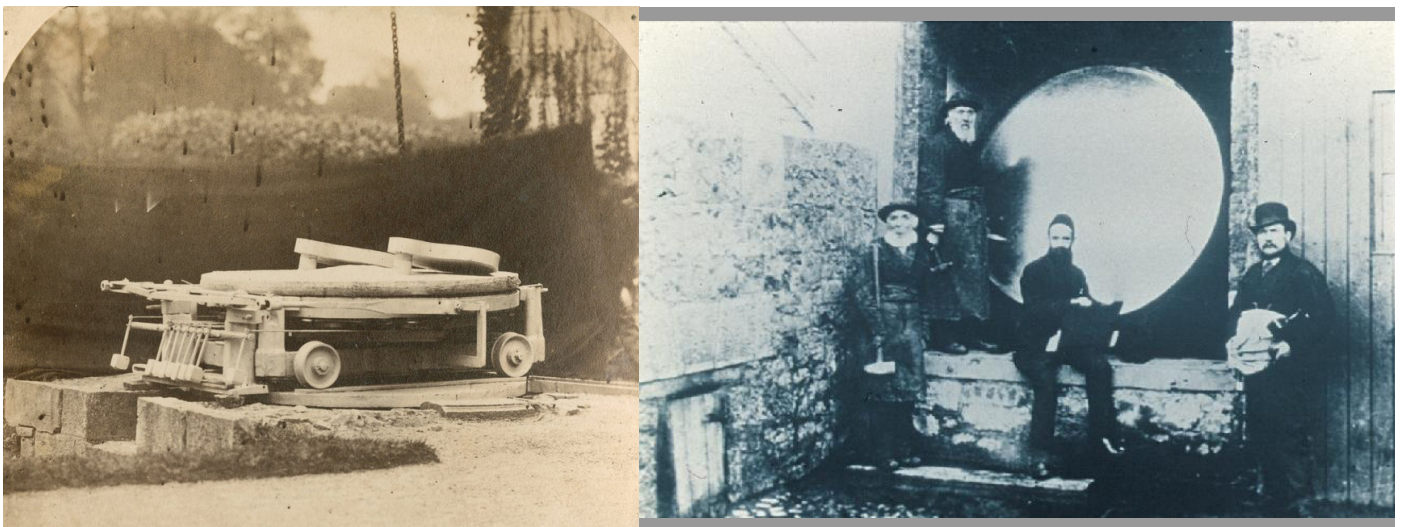
He was the first of the great telescope builders who created almost single handedly a series of speculum metal mirrored reflectors of ever increasing size; beginning with a 6-inch in 1826, followed by a 15-inch in 1830, then soon afterwards by a 24-inch, which was then superseded in 1839 by a 36-inch; and finally in 1845 construction was completed on his famous 72-inch telescope - the '*Leviathan of Parsonstown*'. This telescope was to remain the largest telescope in the world for over 70 years until 1917 when it was '*overtaken*' by the 100-inch Hooker Reflector at the Mount Wilson Observatory in California, USA.

Although William Parsons never used any of his telescopes to take photographs of the Deep Space Objects (DSOs) he observed, he nevertheless made vital discoveries regarding their structure. His drawings of DSOs made by him and his assistants at Birr Castle during the period 1845 to 1867, showed for the very first time accurate representations of their true appearance, later to be confirmed by the photographs of Isaac Roberts (1829-1904), William Edward Wilson (1851-1908), James Edward Keeler (1857-1900) and others.

Above all else, William Parsons demonstrated the great potential reflecting telescopes had in the future conduct of astronomical research. An opinion that was later to be proved correct. The age of telescope building at Birr in the years 1826 to 1845 marked the onset of the '*death*' of the '*Great Refractor*'. However it was to be others who caused '*its*' death; Andrew Ainslie Common dealt '*it*' the fatal blow, and it was James Edward Keeler who put the nails in '*its*' coffin ^[1].

In 1845 William Parsons began using his 72-inch Reflector and during the course of his observations noticed that a number of the bright '*nebulae*' exhibited a definite spiral structure to them. The 3rd Earl of Rosse's discovery of the spiral nature of certain nebulae helped fuel the flames of a long standing argument between himself and another great astronomer of the time – Sir John Herschel. Rosse believed that all '*nebulae*' were made up of individual stars, a fact which would become evident if telescopes of sufficient size were available to observe them; on the other hand Herschel believed that not all nebulae are '*resolvable*' and some of them are made up of clouds of gas which collapse to form stars.

History has subsequently shown that both were right and both were wrong in equal measures! Certain nebulae are in fact made up of clouds of gas, some of which are even '*star forming nurseries*'; whilst others including Rosse's '*spirals*' were in fact external galaxies made up of individual stars, much resembling our own Milky Way; but situated millions of light years beyond the boundaries of our own '*Island Universe*'.



72-inch Speculum Mirror of the '*Leviathan of Parsonstown*'



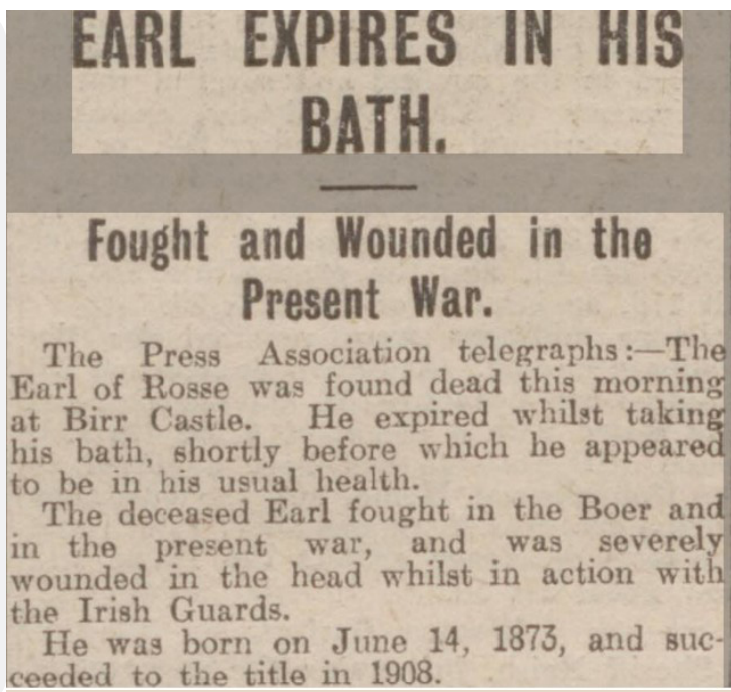
Heaton Hall, Near Bradford, c1890

Heaton Hall, the ancestral home of the Field family was built in about 1660 and demolished prior to 1939. In its heyday it was one of the finest houses in the whole of Yorkshire. On the 11th of January 1837 John Wilmer Field of Heaton Hall, died, leaving the manors of Heaton and Shipley to his eldest daughter Mary. In 1911, William Edward Parsons (1873-1918) the 5th Earl of Rosse, sold the Estates at Heaton and Shipley; which he had inherited from Mary Field on her marriage to William Parsons in 1836.

“THE LATE JOHN WILMER FIELD, —The remains of this gentleman passed through Bradford to Heaton Hall, on Saturday last, in a hearse drawn by six black horses all splendidly decorated with the family, arms emblazoned. The hearse was followed by a mourning coach with four horses.

The funeral took place at Shipley Church, the Monday following in a style probably never surpassed in this neighbourhood.”

From the Leeds Times of Saturday 28th January 1837.

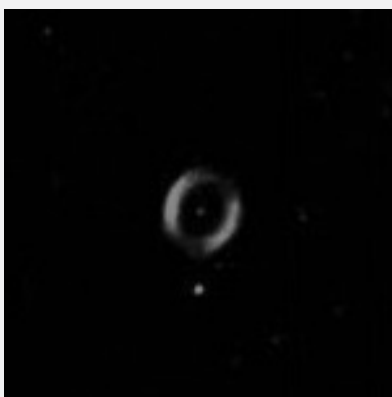


Funeral of John Wilmer Field (Left); Death of 5th Earl of Rosse (Right)



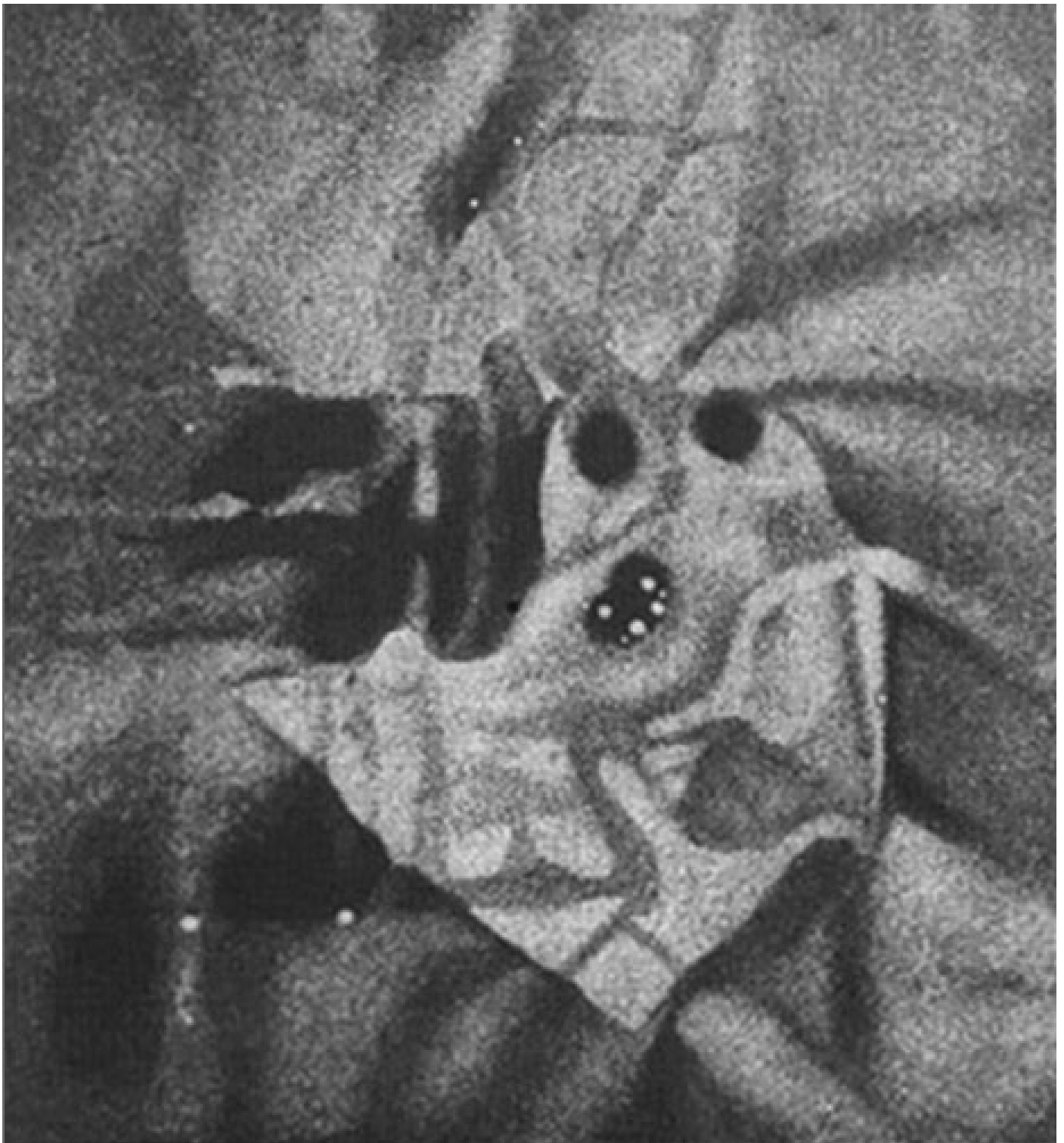
William Parsons, 3rd Earl of Rosse and Mary, Countess of Rosse, c1850

At first glance this cartoon apparently shows a touching moment between William Parsons, 3rd Earl of Rosse and his beloved Countess Mary Field, captured during a game of Cards. A closer look reveals something much more significant. In fact this scene depicts one of the most important events in Astronomy - the discovery of the '*Spiral*' nature of certain nebulae. With the completion of William Parsons' Great 72-inch Telescope in 1845, it was possible for the very first time to see the universe as it was, before the advent of '*Deep Space*' Astrophotography in the 1880s.



These two photographs of '*nebulae*' were taken in 1894, and represent the earliest obtained in Ireland, a country well renowned for its four seasons - all of them wet! They are the work of the Irish amateur astronomer, William Edward Wilson of Daramona House, Streete, County Westmeath.

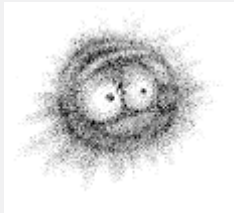
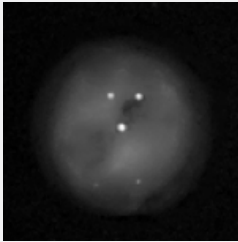



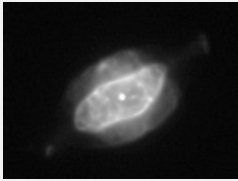
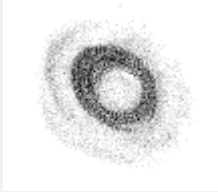
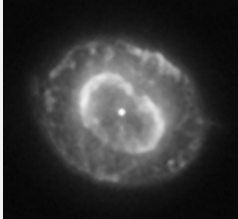

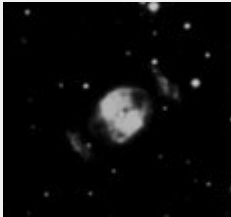

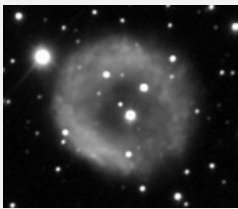


Dumbbell Nebula (left); Ring Nebula (right) William Edward Wilson



Drawing of the 'Great Orion' Nebula, William Parsons, c1845

The drawing to the left of the 'Great Orion Nebula' (M42) was made by William Parsons in around 1845 from observations made at the eyepiece of his '6-feet' telescope. This nebula was seen as the key to disproving the 'Nebular Hypothesis', if this the most famous and brightest of nebulae could be resolved into individual stars then so could all the others.

Observations of the nebula made by Parsons during 1845 caused him to write to the Scottish astronomer and author, John Pringle Nichol in the following Spring, with the apparently sensational news that "*there can be little if any doubt as to the resolvability of the nebula*". Unfortunately the '*popular*' press of the day failed to appreciate the distinction between resolvable and resolved - and immediately declared the death of the '*Nebular Hypothesis*'.

NGC	M	h	Artist	Drawing	Photograph	Notes
3587	97	838	Earl of Rosse			<i>...March 11, 1848 ... Two stars considerably apart in the central region; dark penumbra around each spiral arrangement, with stars as apparent centres of attraction; stars sparkling in it, resolvable; night excellent...</i>
5866	102?	1909	Earl of Rosse			<i>April 27, 1848. A very bright resolvable nebula, but none of the component stars to be seen distinctly even with a power of a thousand. A perfectly straight and longitudinal division in the direction of the major axis. Resolvability most strongly indicated towards the nucleus.</i>
7009		2098	Earl of Rosse			<i>Observed October 23, 1848, and sketch made. October 25, 1848. Sketch confirmed. August 16, 1849 - Position of ring taken with an eyepiece furnished with a level and a position circle. Inclination of ring to horizon 9 degrees.</i>
7662		2241	Johnstone Stoney			<i>October 31, 1848.- Has a central spot, at moments very dark. December 13, 1848.—Nothing more, except perhaps that faint external annulus extends further than had been seen before.</i>
2371		444	Earl of Rosse			<i>December 19, 1848.- Bright star between; tails and curved filaments; perhaps annulus around the two nebula...</i>
2438		464	Earl of Rosse			<i>Annular nebula at the edge of the cluster M. 46. Sketched December 22, 1848 annular, two stars in it.</i>
1980		361	Earl of Rosse			<i>January 28, 1849.—Iota Orionis. Dark space in the nebula containing nearest companion; light nearly equable; sketch made; 3-feet telescope employed.</i>

3. Appendices



William Parsons', 36-inch & 72-inch Reflectors, Birr Castle, c 1890s

The above photograph is of William Parsons' 36-inch Telescope (now sadly no longer in existence) and in the background the '*Leviathan*'. It was taken around 1890 by Robert French (1841-1917), Chief Photographer for the 'William Lawrence Collection'.

Robert French was born in Dublin on the 11th of November 1841, the eldest of seven children. After working in the Royal Irish Constabulary, He joined William Mervin Lawrence's Studio in 1880, firstly as a general assistant, then as printer, then artist, later as assistant photographer, rising to become his main photographer. In 1914 he retired from the business and died three years later.

Appendix A: Family Pedigree: William Parsons, 3rd Earl of Rosse, Part 1

Sir Laurence PARSONS 1st Baronet Birth abt. 1637

Death 1698

+ Frances SAVAGE

① Sir William PARSONS 2nd Baronet Death 17-Mar-1740

+ Elizabeth St. George

+ Elizabeth PRESTON

① William PARSONS

+ Martha PIGOTT Marriage February-1705

① William PARSONS Death 1780

② Pigott PARSONS

③ George PARSONS

④ Thomas PARSONS

⑤ Jane PARSONS

⑥ Elizabeth PARSONS Birth 1705

Death 1768

⑦ Laurence PARSONS 3rd Baronet Birth 1707 Birr Castle, Birr, Offaly, Leinster, Ireland

Death 1756 Birr Castle, Birr, Offaly, Leinster, Ireland

+ Mary SPRIGGE Birth 1715 Offaly, Leinster, Ireland

Marriage 03-Sep-1730

Death 23-Sep-1777 Dublin, Dublin, Leinster, Ireland

① William PARSONS 4th Baronet Birth 06-May-1731 Birr Castle, Birr, Offaly, Leinster, Ireland

Death 01-May-1791 Birr Castle, Birr, Offaly, Leinster, Ireland

+ Mary CLERE Birth 1735 Kilburry, Tipperary, Ireland

Marriage 28-Jun-1754 Dublin, Dublin, Leinster, Ireland

① Laurence PARSONS 2nd Earl of Rosse Birth 21-May-1758 Birr Castle, Birr, Offaly, Leinster, Ireland

Death 24-Feb-1841 22 Brunswick Square, Brighton, Sussex, England

+ Alice LLOYD Birth 1779 Fermoy, Cork, Munster, Ireland

Marriage 05-Apr-1797

Death 04-May-1867 22 Brunswick Square, Brighton, Sussex, England

① William PARSONS 3rd Earl of Rosse Birth 17-Jun-1800 York, Yorkshire, England

Death 31-Oct-1867 1 Eaton Place, Sea Point, Monkstown, Dublin, Leinster, Ireland

Burial 06-Nov-1867 St. Brendan, Birr, Offaly, Leinster, Ireland

+ Mary FIELD 3rd Countess of Rosse Birth 21-Jul-1813 Heaton Hall, Heaton, Bradford, Yorkshire, England

Christening 24-Jul-1813 St. Peter, Bradford, Yorkshire, England

Marriage 14-Apr-1836 St. George, Hanover Square, London, England

Death 22-Jul-1885 10 Connaught Place, Kensington, London, England

Burial 25-Jul-1885 St. Brendan, Birr, Offaly, Leinster, Ireland

② Lady Jane PARSONS Birth 18-Nov-1813 Kensington Gore, Kensington, London, England

Death 31-Dec-1883 Trotton House, Midhurst, Sussex, England

Burial January-1884 St. George, Trotton, Sussex, England

+ Arthur Edward Knox Birth abt. 1810 Dublin, Dublin, Leinster, Ireland

Marriage 12-Dec-1835 St. Peter, Petersham, Surrey, England

Death 23-Sep-1886 Dale Park, Madehurst, Sussex, England

Burial 1886 St. George, Trotton, Sussex, England

③ John Clere PARSONS Birth 17-Aug-1802

Death 10-Aug-1828 Birr Castle, Birr, Offaly, Leinster, Ireland

④ Laurence PARSONS Birth 02-Nov-1805 Birr Castle, Birr, Offaly, Leinster, Ireland

Death 22-Nov-1894 Winkfield Place, Winkfield, Berkshire, England

+ Elizabeth Graham Toler Birth abt. 1810 Ireland

Marriage 07-May-1836 St. James, Westminster, London, England

Death 09-Dec-1844

+ Hon. Lady Jane DUNCOMBE Feversham Birth abt. 1824 Helmsley, York, Yorkshire, England

Christening 02-Dec-1824 Helmsley, York, Yorkshire, England

Marriage 11-Apr-1849 St. Peter, Pimlico, Westminster, London

Death 03-Apr-1901 Lavender Farm, Ascot, Berkshire, England

⑤ Alicia PARSONS Birth 18-Nov-1815 Birr Castle, Birr, Offaly, Leinster, Ireland

Death 21-Jan-1885 Arborfield, Berkshire, England

+ Sir Edward CONROY Bart. Birth 06-Dec-1809 Dublin, Dublin, Leinster, Ireland

Marriage 30-May-1837 Greta Green, Scotland

Death 03-Nov-1869 Arborfield, Berkshire, England

② John Clere PARSONS Birth 29-Jan-1760 Dublin, Dublin, Leinster, Ireland

Christening 23-Mar-1760 St. Peter & St. Kevin, Dublin, Dublin, Leinster, Ireland

Death 1825

③ Rev. William PARSONS Birth 1764

Death 1838

④ Thomas Clere PARSONS Birth abt. 1766 Birr Castle, Birr, Offaly, Leinster, Ireland

Death August-1825 Birr Castle, Birr, Offaly, Leinster, Ireland

+ Anne HARMAN Marriage 16-Feb-1742

① Wentworth PARSONS Birth October-1745

② Laurence Harman PARSONS 1st Earl of Rosse Birth 26-Jul-1749

Death 20-Apr-1807

+ Lady Jane KING Marriage 11-Jun-1772

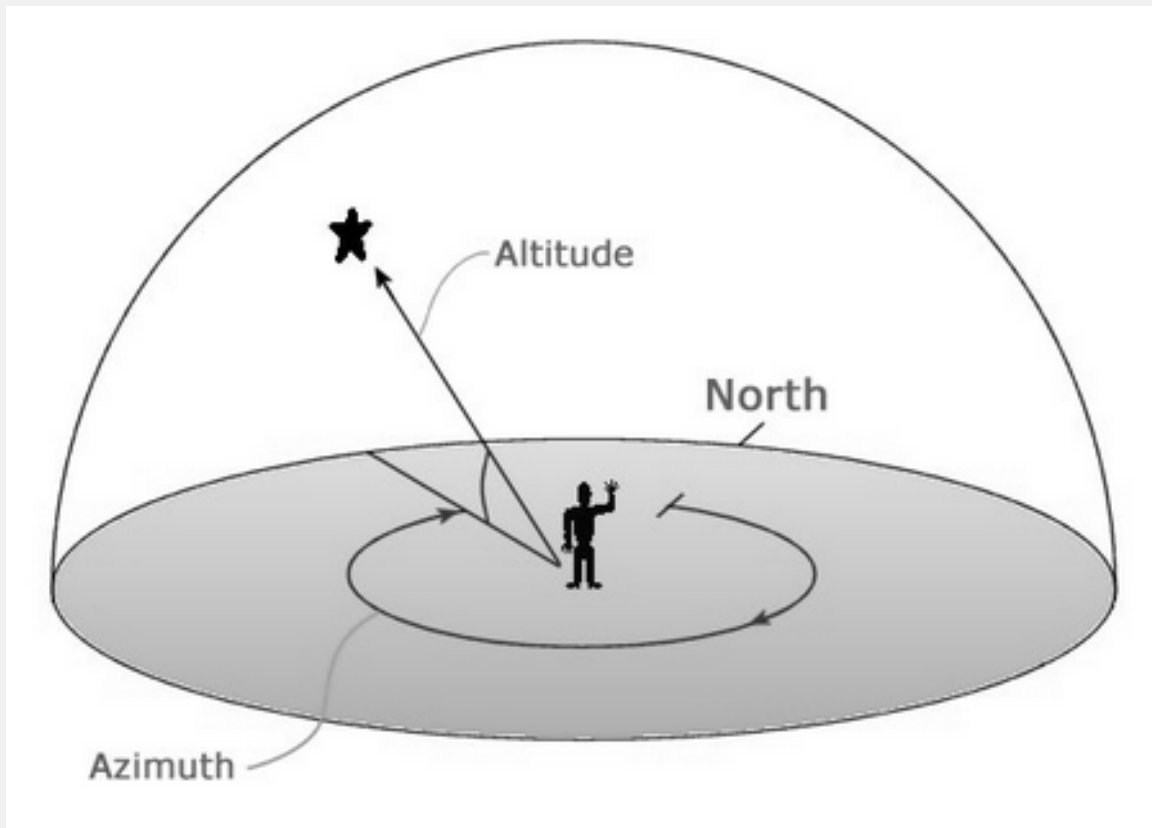
① Lady Frances PARSONS Birth 31-Mar-1775

Death 07-Oct-1841

+ Robert (---) Viscount Lorton Marriage 09-Dec-1799

Appendix C: Glossary of Terms

Altitude: Is used to describe the location of an object in the sky as viewed from a particular location at a particular time. The altitude is the distance an object appears to be above the horizon. The angle is measured up from the closest point on the horizon.



Azimuth: Is used to describe the location of an object in the sky as viewed from a particular location at a particular time. The azimuth of an object is the angular distance along the horizon to the location of the object. By convention, azimuth is measured from north towards the east along the horizon.

Calotype: A photographic process for making negatives on paper in which the latent image is made visible by chemical development. It was developed by William Henry Fox Talbot and was announced to the public on the 10th of June 1841.

Collodion: A flammable, syrupy solution of pyroxylin (aka '*nitrocellulose*', '*cellulose nitrate*', '*flash paper*', and '*gun cotton*') in ether and alcohol; or name of the photographic process introduced by Frederick Scott Archer in 1851.

Daguerreotype: A direct positive process in which a silvered copper plate is made sensitive to light by fuming in iodine vapour. After exposure the latent image is made visible by the fumes of warmed mercury (see section C.2 of Appendix C). It was invented by Louis Jacques Mande Daguerre (1787-1851), and was revealed to the public on the 19th of August 1839.

Declination: It is one of the two coordinates of an equatorial coordinate system, the other being either **right ascension** or hour angle. Declination in astronomy is comparable to geographic latitude, but projected onto the celestial sphere. Declination is measured in degrees north and south of the celestial equator. Points north of the celestial equator have positive declinations, while those to the south have negative declinations.

4. End Piece



The 'Leviathan of Parsonstown', c1900, Thomas Holmes Mason

The above photograph of the 'Leviathan' is by the Dublin photographer, Thomas Holmes Mason (1877-1958) and was taken sometime around 1900. A collection of his photographs, dating primarily from the early 1900s to the 1940s can be found in the National Library of Ireland. Many of his photographs are of Irish industry in the first years of the 20th century, with country themes also well represented. In addition to being a photographer, Mason was also a naturalist, meteorologist, and businessman. He was born in Dublin on the 9th September 1877 and was the author of two books - '*The Islands of Ireland: their scenery, people, life, and antiquities*' and a '*Catalogue of lantern slides of Irish antiquities*'.

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The Author

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The tale of William Parsons, 3rd Earl of Rosse of Birr Castle, Ireland is that of a real *'Downton Abbey'*. Born into an ancient line and charged with the preservation of his family's wealth and lands he married a rich English heiress at first for her money, but which eventually turned to love. Out of the great sadness borne from the loss of nine of their thirteen children, in infancy, the couple cared for all who depended upon them. During the Irish Potato famine of the 1840s, the couple did all they could to prevent starvation among their tenant workers; and yet, William Parsons found the time to build a Great Telescope known as the *'Leviathan of Parsonstown'*, which he used *'to afford us some insight into the construction of the material universe'*.

The *'Catchers'* series of stories like Geoffrey Chaucer's famous *Canterbury Tales* are about the lives of ordinary people told against a common *'backdrop'*, his was a Pilgrimage and here it is Astrophotography; but both were of adventure, adversity and triumph - only the *'Catchers Tales'* are true and based entirely on fact.

The Catchers of the Light

