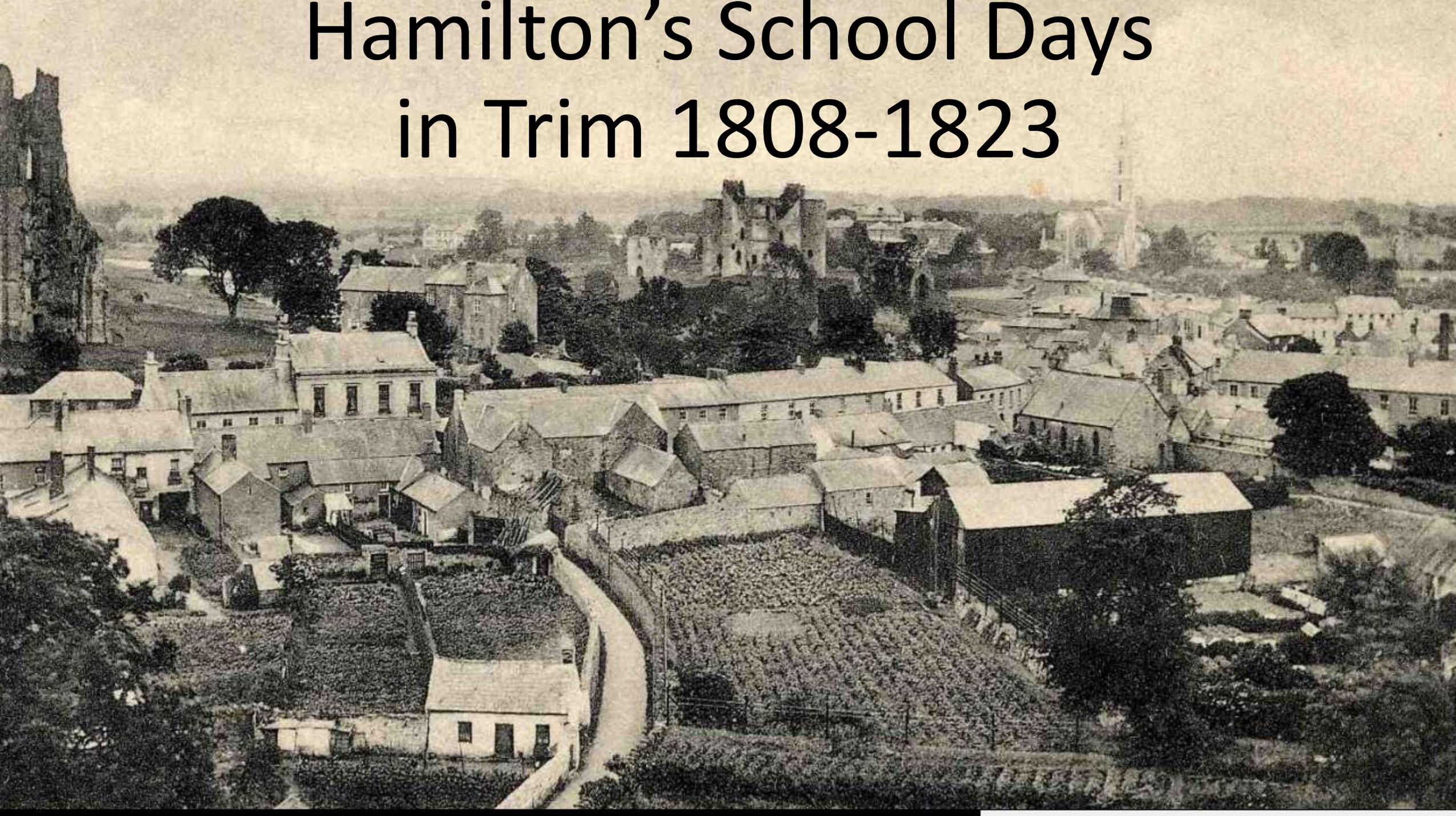# Hamilton's School Days in Trim 1808-1823

**Miguel DeArce**

Smurfit Institute of Genetics (retired)

Trinity College Dublin

# Hamilton's School Days in Trim 1808-1823

**St. Mary's Abbey**

Talbot Castle

Google

# Headings:

- **Uncle James and the Diocesan School**

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  - **Poetry**
  - **Astronomy**
  - **Mathematics**

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- **Uncle James and the Diocesan School**

- **School curriculum**

- **Hamilton's extra-curricular activities**
  - **(Poetry)**
  - **Astronomy**
  - **Mathematics**

- **Outcomes in Hamilton's future career**


- Graves 3 vol. Biography (1882-1889), v. I Chapters 1 -6.

# Uncle James and the Trim Diocesan School

- **BA TCD 1796**
- **Ordained priest for C o I (Diocese fo Meath) 10 April 1800**
- **Married Elizabeth 1804. 10 children**

- **Operated 1808 – 1822 (House of Commons, no scholars in 1822 and 1823)**
- **Received £40 p.a. from Bishop of Meath**
- **About 20 scholars per year, (13 in 1820, 4 in 1821)**
- **Successful at the TCD Entrance Examinations**

# Curriculum

- **Michael Quane (*Records Meath A&H Soc*. 1971, IV: pp40-59)**
  - **Hebrew, Oriental languages and The Classics**
  - **Composition, versification in Greek, Latin and English**
  - **Arithmetic, introduction to Mathematical Sciences, use of the Globes in Geography …**
  - **History and Chronology, including the Jewish, Grecian and Roman Antiquities, Heathen Mythology**

  - **Hamilton started at age 3, presented at 18**
  - **Focused on the TCD Entrance Examination**
  - **Some entrance candidates were age 14**
  - **Bessie (one of James' daughters) hated it**

# Extra-curricular activities: Classics/Astronomy

- *Notes on Virgil's Aeneid, Book III, 506-517* (considered lost. Graves, vol.1: p102).
- "… he (NB Palinurus) notes/ all the stars gliding through the silent sky,/ Arcturus, the rainy Pleiades, both the Bears, and surveys Orion, armed with gold."
- *Arcturus* derives from Ancient Greek Ἀρκτοῦρος (Arktouros) and means "Guardian of the Bear." Observable April – Autumn
- *rainy Pleiades* associated by Classics with the beginning of Autumn
- It disappears from the early morning sky in May, to reappear again in August
- Aeneas arrived to Italy in August – September, having sailed from Troy.

# Extra-curricular activities: eclipse prediction

- **In pp. 62 -146 (vol. 1) Graves reports 14 Astronomical observations made by Hamilton in Trim from 1819 to 1822.**

- **Increasing ability and interest in calculating the timing of future astronomical events including Sun and Moon eclipses.**

- **Hamilton had sufficient background in Positional Astronomy to apply for the Chair. Mathematics competed with Astronomy in his mind.**

# Extra-curricular activities: eclipse prediction

- **TABLE 1. WRH'S ASTRONOMICAL REMARKS 1819-23. (WP Graves vol. 1)**
- **Page   Date                Observations (nearly all made in Trim)**
- **P62. 1819 WRH visits Dunsink Observatory, in the absence of Dr. Brinkley, Astronomer Royal. He is shown the instruments and returns the following day.**
- **P82. 1820 August 26. Hopes to receive from Uncle Wyllie the plan for the approaching (solar) eclipse… "(I) have begun to study the doctrine of eclipses in Kiel's *Astronomy.*" (letter to aunt Susan).**
- **P83. 1820 Nov.        "Observed Ring of Saturn, Jupiter moons."**
- **P89. 1820            "Venus to cross Moôn next Saturday at 5:00 am. Jupiter's transit 'would have been visible.'"**
- **P89. 1821.            "Occultation on morning June 17. A knowledge of the moon's parallax and semi diameter is necessary for accurate calculation."**
- **P91. 1821. 16 June. "Occultation of a fixed star, at 3:24'30" as I calculated (but did not see). Jupiter and Saturn in conjunction, (took place on the 19th)."**

# Extra-curricular activities: eclipse prediction

- P91. 1821. 16 June. "Occultation of a fixed star, at 3:24'30" as I calculated (but did not see). Jupiter and Saturn in conjunction, (took place on the 19th)."

- P91 1821 14 July. "Cousin Arthur procured me a good telescope from Mr. Mason…"

- P96. 8 December 1821. "Passage of the moon through the Pleiades. Moôn studded with stars all around. Occurs every month, but seldom visible."

- P99. 18 Feb. 1822.        "Saw Jupiter's satellites twice."

- P81.  1822 29 March "Moon eclipse, another 22 Sept. Solar eclipse, 7 SEP."

- P101. 10 May 1822.     "Two months ago I made a great many calculations on the next eclipse of the moon, part of which will fall on 3 August, my birthday."

- P102. 1822                    Astronomy and Virgil's Illiad passage.

- P112. 4 September 1822. (At the beginning of last year … I was lent Brinkley's *Astronomy* … I bought an *Ephemeris* and my favourite amusement was calculating and observing occultations of stars by the Moon; eclipses, too …"

- P128. 23 Feb. 1823.      Speculative Astronomy.

- P143-146. 16 July 1823.      "There will be another fine eclipse of the Moon next Wednesday morning, 23 July." *Ode to the Moon under total eclipse*.

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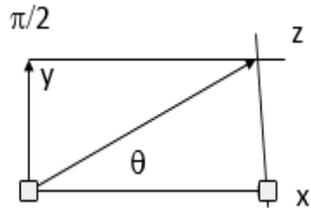# Extra-curricular activities: Astronomy

- **He could predict Solar and Lunar eclipses in his last years in Trim**
  - **Access to Ephemeris publications (Nautical Almanac) and textbooks.**
  - **Graphic Method (uncle Wyllie)**
  - **Saros cycle 18 years, 11 days, 8 hours.**
  - **Numerical method (Brinkley, others)**
  - **Cousin Arthur gave him a telescope**
- **Date, hour and their visibility from Trim**

# Maths: Correcting Laplace 1822

- **All biographies cite this as 'correcting an error.'**

- **What was Laplace's 'error'?**

- **It occurs in Vol.1 p.6 of *Mecanique Celeste***

# Maths: Correcting Laplace 1822

- **Laplace was trying to prove the value of the resultant z of two perpendicular forces, x and y. The angle between z and OX is θ.**



et $x = z.\cos. k\,\theta$. Si l'on suppose $x$ nul, on a $z = y$ et $\theta = \frac{1}{2}\pi$; cos. $k\theta$ étant alors égal à zéro, $k$ doit être égal à $2n+1$, $n$ étant un nombre entier, et dans ce cas, $x$ sera nul toutes les fois que $\theta$ sera égal à $\dfrac{\frac{1}{2}\pi}{2n+1}$; mais $x$ étant nul, on a évidemment $\theta = \frac{1}{2}\pi$; donc $2n+1=1$, ou $n=0$, et par conséquent

$$x = z . \cos. \theta.$$

- **Hamilton observes: "Laplace argues as if $\theta = (\pi/2)/(2n+1)$ when x=0"**
- **But this will also happen when $\theta = (3\pi/2)/(2n+1)$, $\theta = (5\pi/2)/(2n+1)$ etc. Many people would not call this a <u>correction</u> but just a <u>remark</u>.**

# Outcome of extra-curricular activities

Hamilton's extra-curricular learning in Trim helped him develop life-long interests that were also very useful. The Chair of Astronomy at age 22 did not come 'out of the blue'.

His first (unpublished) astronomy paper was based on *The Illiad*, and it was a mix of Classics, Astronomy and Mathematics.

- **Before entering College William was an accomplished Positional Astronomer. Uncle Wyllie and Cousin Arthur assisted.**
- **The incident of the  Laplace remark tends to be over-stated. Nonetheless. WRH amended his ammnement in 1844**  *On the Composition of Forces* (Proceedings of the Royal Irish Academy, 2, pp. 166-170).
- .
- **In 1808 – 1822 there were <u>two</u> academic geniuses in the Diocesan School in Trim; Uncle James and William.**

# Acknowledgements

- Archives Dept, Trinity College Library
- Research Library, University College Galway
- Tom French, Trim County Council Library
- Royal Irish Academy
- Fiona Vincent, Observatory, St. Andrews
- Michael Burton, Observatory, Armagh