The chronology of Middle-earth

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Despite Tolkien's meticulous attention to dates and chronology as evidenced by the appendices to *The Return of the King*, at no time was he prepared to admit precisely how this chronology can be tied into our own. In other words, when did all his stories take place? On the few occasions that he was prepared to be drawn on the issue, Tolkien gave vague and contradictory answers, ranging from the Ice Age, to just a few thousand years ago. As we shall see, both statements are correct, because the First Age of Middle-earth did indeed coincide with the Ice Age, whereas the Fourth Age began just over five millennia ago.

One of the reasons, it may be speculated, that Tolkien was so unwilling to admit the true chronological setting of his stories is possibly because by doing so, he would have had to admit his interest in a system of occult philosophy known as Theosophy. Nevertheless, it is clear that he had studied it, or at the very least had taken an interest in some of its ideas.

According to Theosophical doctrine, the last vestige of the once mighty continent of Atlantis sank beneath the waves in 9564 BC[1]. Much later, the Kali Yuga (or Fourth Age of the present World Cycle) began in 3102 BC[1]. These two events, therefore, are separated by 6462 years. Now it turns out that the sinking of Beleriand (not Númenor) is separated from the beginning of the Fourth Age of Middle-earth by precisely the same time span, 6462 years. The maths is simple – Beleriand was destroyed in the final year of the First Age, the Second Age lasted 3441 years, and the Third Age lasted 3020 years (plus a couple of months or so). 1+3441+3020=6462. The chances of Tolkien hitting on this number by accident are infinitessimally small, especially when in both the Middle-earth mythology and Theosophical doctrine this period is opened by the submergence of a huge landmass, and is closed by the beginning of something called the 'Fourth Age'. We can now, without further ado, peg the first year of each age of Middle-earth as follows (the First Age will be dealt with later):

Second Age:	9563 BC
Third Age:	6122 BC
Fourth Age:	3102 BC

What about Númenor, which was destroyed in 3319 Second Age – surely that was Atlantis, rather than Beleriand? Well, yes it was. But the destruction of Beleriand was a much greater catastrophe, at least in terms of land area sunk (the Change of the World was another matter, of course!). The ancient Sanskrit myths which were the basis of Theosophical doctrine may have remembered the greater catastrophe and forgotten the lesser, or at least confused the two events. On our chronology the sinking of Númenor occurred much later, in 6245 BC (3319 Second Age).

Do these dates contradict what Tolkien himself has said on the issue? In *Letters*, #211, he says:

... I hope the, evidently long but undefined, gap(*) in time between the Fall of Barad-dûr and our Days is sufficient for 'literary credibility', even for readers acquainted with what is known or surmised of 'prehistory'.

(*) I imagine the gap to be about 6000 years: that is we are now at the end of the Fifth Age, if the Ages were of about the same length as S.A. and T.A. But they have, I think, quickened; and I imagine we are actually at the end of the Sixth Age, or in the Seventh.

Can approximately 5100 years be said to be 'about 6000'? It really depends on the context, and perhaps Tolkien was trying to tell us that the events in question should not be pushed back millions or hundreds of thousands of years, as some readers were no doubt tempted to do. As an indication of his imprecision on the matter, compare the following quote from *The History of the Lord of the Rings*:

The moons and suns are worked out according to what they were in this part of the world in 1942 actually... I mean I'm not a good enough mathematician or astronomer to work out where they might have been 7,000 or 8,000 years ago, but as long as they correspond to some real configuration I thought that was good enough.

Here we have not 6000 years, but 7000 or 8000! It is clear that Tolkien himself had no intention of being more precise, and if he was prepared to be vague by as much as two millennia, then we should not be overly concerned that our own figure is apparently too recent by a mere few centuries. The rest of the evidence for our dates is so compelling as to render such considerations of little or no importance.

So far, using the Theosophical data, we have been able to determine the first year of each age of Middle-earth. Yet there is far more information to be gleaned from Tolkien's writings, and incredibly, we are able to pinpoint

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all the events in *The Lord of the Rings* to the exact day! The astute reader may have already worked out how this is possible. The whole chronology of Middle-earth can be pinned down to the precise day by reference to one single astronomical event that occurred on the night of 8/9 Narviny 3019 Third Age (i.e. 8/9 Afteryule on the Shire Calendar), when Frodo and company left Hollin - namely, a full moon. Furthermore, it was a full moon that occurred roughly nine or ten days after the winter-solstice, because the solstice occurred at the start of the calendar year. Since we already know what year this must be (two years before the beginning of the Fourth Age), then the full moon in question can be none other than that which can be calculated to have occurred at 11:20 UTC (i.e. GMT)[2] on the following date:

<div align="center">

Monday 31 December 3105 BC[3]

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(In a break with historical convention I have given all BC dates according to the Gregorian Calendar, because it is more seasonally accurate than the Julian. The notes at the end give the Julian Calendar equivalent, and also the Julian day count, which is often employed by chronographers.) The fact that this particular full moon occurred about nine or ten days after the winter-solstice is further confirmation that we have found the correct year, and implies that Tolkien had consulted astronomical tables – despite his statement quoted above! Since the moon was at its most full during the middle of the day, then it follows that 31 December must be equal to either 8 or 9 Narviny. Can we choose between the two? As a matter of fact, yes we can.

The mathematics of the Ages

But first of all, for the mathematically minded, I shall summarise what we know of each age. The Second Age is the simplest – it consists of exactly 3441 years. Leap-years occurred every fourth year, except at the end of a century. At the end of each millennium there was what we might call a double-leap-year, i.e. the year had 367 days in it. Tolkien doesn't state this in so many words, but we know it must be true because he tells us that the millennial deficit of the calendar against the astronomical year was 4 hours, 46 minutes, and 40 seconds. Since, as can be calculated, one millennium on his calendar totalled 365,242 days (including the double-leap-year), and one thousand astronomical years add up to 365,242.2 days, that extra 0.2 of a day is very close indeed to Tolkien's

stated deficit. The upshot of all this is that the entire Second Age lasted for 1,256,797 days. The Third Age is slightly more complex, but not inordinately so. The basic rules were exactly the same, except that they were tampered with a number of times. Two extra days were arbitrarily added to the year 2059, making it a double-leap-year, and one extra day was added to 2360, which also therefore became a double-leap-year (it was already a leap-year of course). On the other hand, the year 3000 was not a double-leap-year (nor even an ordinary leap-year), because the authorities neglected to add the two extra days. The only other thing we have to take into account is that the Third Age was terminated, in Gondor, part of the way though the year 3021 – after just 85 days of it in fact, or just under three months. Although the official start of the Fourth Age was delayed in other parts of Middle-earth, we are following Gondor here, the seat of the kings. The complete total for the Third Age therefore turns out to be 1,103,117 days.

Critical dates

So let us return to choosing between the two dates mentioned above for the full moon of 31 December 3105 BC - either 8 or 9 Narviny 3019 Third Age. The answer lies in days of the week. The following analysis is rather complex, not to say somewhat speculative. But since its sole purpose is to choose between just one of only two days, even without it we have already determined a degree of accuracy that far exceeds that of the chronology of Ancient Egypt, for example. Now, as far as the Hobbits are concerned, weekdays are of no use, because they did not have a continuous week. But the other peoples of Middle-earth certainly did, and for them the week began on a Saturday (Elenya). Incidentally, Saturday is also the first day of the week as far as ancient astrologers were concerned, perhaps another indication of Tolkien's Theosophical research. We are told that the Númenoreans, who first devised this calendar, originally inherited the Eldar week of six days, but later (we are not told when) increased the number to seven. However, in actual fact, since Númenor was not colonised until the year 32 Second Age, both the seven-day week, and the calendar itself, were almost certainly proleptic (i.e. retrospective), at least for the first thirty-two years of their putative operation. It seems highly likely that the Númenoreans would have retrospectively made the first day of their newly-devised calendar a Saturday (on their newly-invented seven-day-week). It turns out that if

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Yestarë (New Year's Day) of the first year of the Second Age fell on a Saturday, then 9 Narvinyë 3019 Third Age would be a Monday (as indeed was 31 December 3105 BC). The alternative would have the first day of the Second Age fall on a Friday, which is much less satisfactory. We can now, therefore, offer the following exact dates for the first day of each age:

Second Age: Saturday 26 December 9564 BC[4]
Third Age: Tuesday 24 December 6123 BC[5]
Fourth Age: Wednesday 18 Mar 3102 BC[6]

The first two of these dates, despite appearances, are almost exactly the winter-solstice – the Gregorian Calendar gets slightly out of synchronisation with the seasons when projected that far back. The last is a few days before the spring-equinox.

First Age chronology

For the sake of completion, it would be nice if we could say something about the chronology of the First Age. As it happens, we can say quite a lot of things, but much of it is highly technical and based on certain assumptions. Chief amongst these assumptions is that we can use recently published material to supplement *The Silmarillion*. The consensus amongst researchers seems to be that we can indeed, as long as it does not contradict the 'canonical' writings, and that we must also take Tolkien's latest word on any particular subject. We know that there were approximately six hundred years of the sun during the First Age, and this is confirmed by the now published figure of 597 years (Annals of Beleriand). Tolkien tells us that these years, as reckoned by the Eldar, were counted from the spring-equinox. Yet the calendar of Númenor starts with the winter-solstice. In other words, the last year of the First Age was only three-quarters of a year long, at least for our purposes – though in fact, of course, the Elves continued their calendar without interruption. We are told that in 3021 Third Age the Elven New Year's Day fell on 6 Astron in the Shire Calendar (5 Víressë Old Style, Gondor). Calculating backwards, and based on the Reckoning of Rivendell as described in The Return of the King, it turns out that the year 597 of the sun was truncated after 277 days, with day 278 becoming the first day of the Second Age. The total number of days for the years of the sun during the First Age was 217,961. In brief, the calendar rules for the Reckoning of Rivendell are as follows – leap-years occurred every twelfth year, and were

always treble-leap-years (368 days). 144 years made a yén, and in the last year of every third yén the three extra days were omitted. We can therefore state with confidence that the first uprising of the sun occurred on the following date:

25 March 10,160 BC[7]

Which was either on or very close to the spring-equinox in that year. And, of course, no earlier dates are possible on the Gregorian Calendar, because without the sun marking the days and the years, the calendar simply cannot function, and to project it backwards would be meaningless. Note also that the day of the week has not been given, because during the First Age the seven-day-week had not yet been invented (for the curious, if the weekdays are projected backwards, it happens to be a Thursday, but this has no bearing on our calculations). On the six-day Eldar week, of course, it was Elenya (Saturday). There is one further item of interest with regard to this date. Tolkien tells us that the moon arose before the sun, and crossed the sky seven times before the sun arose, which can only mean seven nights. It can be calculated that a full moon occurred the equivalent of six days before the above mentioned date (at 08:11 UTC on what would have been 19 March)[2], which, counting inclusively, is of course seven nights (i.e. we are counting the night of 18/19 March as the first night, as it is closest to the full moon. 24/25 March is therefore the seventh night). In other words, when the moon first arose, it was showing its full face to the earth, which seems singularly appropriate.

The Valian year

Prior to the uprising of the sun, we now know that there were 5000 'Valian Years' – each of which lasted for the equivalent of 84,000 of our hours (Annals of Aman). Each Valian Year therefore works out to be the equivalent of about 9.5826823 astronomical years – nearly a decade long in our terms! Since the Gregorian Calendar is inoperative prior to the creation of the sun we cannot give a meaningful equivalent date for any of these. Just for fun, however, and simply to get a perspective on it, we can calculate that there were the equivalent of 17,500,000 of our days during this lengthy period before the creation of the sun, and that the first Valian Year began on what would have been the following date – had the sun actually been in existence at the time:

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10 November 58,074 BC[8]

Projections

As a final aside, many will no doubt be wondering if we can project any of these calendars forward into our own time. It would be a relatively easy task to project the Fourth Age calendar forward as far as we liked, but unfortunately such a thing would give a false impression because Tolkien stated that the ages have probably quickened, in other words got shorter. We are, therefore, no longer in the Fourth Age, but on current evidence have no way of knowing when the Fourth Age ended – presumably sometime BC. Furthermore, if the Third Age is anything to go by, it is perfectly possible that the calendar rules for the Fourth Age were tampered with at some unknown date. In other words we are doubly in the dark. The same comments could equally apply to the Shire Calendar, which was synchronised to that of the Third Age. On the other hand, the Reckoning of Rivendell, being an Elven calendar (and, indeed, the only one we know the rules for), is much more likely to have remained stable and unchanged. Given this assumption, we can state categorically that the first day of the sixty-eighth year of the eighty-fifth *yén* is equivalent to the following date:

Tuesday 30 March 2004 AD[9]

Which falls on the third day (Isilya, i.e. Monday) of the Eldar six-day-week. For more information on the Reckoning of Rivendell please consult *The Return of the King*. It will be noticed that this date is about eight or nine days after the spring-equinox. In other words, the Reckoning of Rivendell, as described by Tolkien, does not keep in step with the seasonal year over such vast amounts of time. Tolkien knew this of course, but he also stated that if any further corrections were made to the calendar, these are not known about. So we have assumed here that there weren't any. We have also assumed that the six-day-week has run continuously since the beginning without any interruption.

Conclusions

In conclusion, it may come as a surprise to some that the Fourth Age of Middle-earth began around the same time as the founding of the kingdom of Egypt. And yet in Europe at this time we have archaeological remains of a large and sophisticated civilization, the Megalithic Culture, which could so very easily correspond to Tolkien's kingdoms and peoples of Middle-earth. If we take Hobbiton to be Tolkien's own childhood home of Sarehole, Worcestershire (now West Midlands), and Barad-dûr to be the island-volcano of Stromboli off the west coast of southern Italy (as Tolkien once stated), then the rest of the geography falls into place. As for the fact that Britain is now an island, this clearly indicates that the flooding of the North Sea occurred later than the events described in *The Lord of the Rings* (the same applies to the western Mediterranean). As it happens, there exists a mysterious manuscript known as the *Oera Linda Book*, which was discovered in the Netherlands in the 1860s[10], just a few dozen miles from what is now the Belgian town of Bree (north-east Flanders). This manuscript tells us that the flooding of the North Sea occurred in the autumn of 2194 BC, which works out as the year 909 Fourth Age.

Notes
[1] Arther, James, Occult Chronology (The Theosophical Publishing House, Adyar, India, 1943)
Reprinted from The Theosophist of November 1940, and August, September, October, and November 1941
[2] Moontool for Windows, Version 2.0 (© John Walker, 1999)
[3] 31 Dec 3105 BC Gregorian = 26 Jan 3104 BC Julian (587712.5 Julian day)
[4] 26 Dec 9564 BC Gregorian = 10 Mar 9563 BC Julian (−1771394.5 Julian day)
[5] 24 Dec 6123 BC Gregorian = 10 Feb 6122 BC Julian (−514597.5 Julian day)
[6] 18 Mar 3102 BC Gregorian = 13 Apr 3102 BC Julian (588519.5 Julian day)
[7] 25 Mar 10,160 BC Gregorian = 11 Jun 10,160 BC Julian (−1989355.5 Julian day)
[8] 10 Nov 58,074 BC Gregorian = 20 Jan 58,072 BC Julian (−19489355.5 Julian day)
[9] 30 Mar 2004 AD Gregorian = 17 Mar 2004 AD Julian (2453094.5 Julian day)
[10] Sandbach, William, The Oera Linda Book (Trübner & Co., London, 1876)