From: [redacted]
To: A303 Stonehenge
Subject: Proposed A303 Highway Improvements
Date: 09 August 2020 09:58:17
Attachments: Submission to Planning Inspectorate Aug "20.pdf

Ref. Application for Development Consent Order for A303 Improvements at Stonehenge

Dear Sir / Madam, I note that decision for above has been deferred to 13th November 2020. It is stated that new material relevant to the Development Consent Order decision can be submitted until August 13th.

This mail makes the case for the south-west sector of the Stonehenge Estate as an integral part of the complete Stonehenge monument and an essential component of the design, construction and use of the stone circles c. 2500 B.C. onwards. The south-west sector in question stretches for c. 1 km. away from the monument and is presently cut into two chunks by the A303 highway, which seems to me to be an insult to the monument and its creators.

I would like to make my own comment in so far as the recent discovery of (Neolithic?) pits close to Durrington walls is concerned. It appears that these are well clear of the proposed route for the A303 improvements and are therefore not in conflict. It is not reasonable to argue that, because these have recently been discovered where they have, then there may be similar to be discovered on the new roadworks alignment. So long as possible archaeology within the new roadworks is detected and explored as work proceeds (as I am sure it will be) then the possibility should not be sufficient reason to block the new roadworks. It can be argued that the new roadworks will offer a very good opportunity to very thoroughly carry out archaeological exploration, probably at public expense as part of the development. This actually sounds like a golden opportunity for archaeology in this area which they would be wise to 'grasp with both hands' whilst the opportunity is on offer. It is generally agreed that most archaeological excavation is destructive anyway so therefore one side or the other will probably destroy any archaeology later if not sooner! It sounds sensible to proceed with care but at least to move forward. This is the opinion of a mere common man – member of the public – citizen – very

interested bystander – non-professional!

I also have some new material of my own which I wish to put forward which I feel is relevant to this debate and offers further reason why the proposed road improvement should go ahead A.S.A.P. I have been working on this aspect of Stonehenge for some time but have only just collected it all into one comprehensive document within the last few weeks to a point where it is ready to be put into the public domain. Therefore I have only just had this material in a coherent form to submit to you. I have now placed my completed document on-line (late June / early July) for public viewing where it is available to view free of charge. For the purpose of this debate and this mail I have extracted relevant pages and provided them in the attachment (c. 57 pages).

A main theme of my new work is that I wish to emphasise how very important is the landscape within which Stonehenge is constructed, particularly the south-west sector from the stone monument itself towards the south-west for a distance of 1 km. as far as the small woodland known as 'Normanton Gorse' and the lone round barrow 'Amesbury G 15'. I here make the case that this is a very important part of the stone monument, possibly more so than the familiar north-west sector along the Stonehenge Avenue towards mid-summer sunrise. It is however an area whose importance is rarely stressed and has had little special focus / examination by specialists. Also it is rarely described in any detail. My work raises much new evidence, observation, deduction about this south-west sector and its importance for the original functioning of Stonehenge, its purpose, and the reason for its siting and construction as it was.

I believe that as new research and ideas concerning the south-west sector become more widely considered there is going to be a much greater interest in this south-west sector by many people. This means that there are going to be far more people wishing to explore this sector on foot. This may be tourists or family groups with young and old members. However the current situation means that pedestrians must seek to cross the A303 to access this area, probably at any time of day (or twilight, or darkness). Clearly that is an untenable situation which can only be resolved when the A303 is removed from cutting across this south-west sector.

It seems to me that, from the point of view of common sense and sanity, either the A303 must be removed from cutting across the south-west sector, or, it may be necessary to try to prevent exploration of this large and very important part of the Stonehenge Estate by pedestrians. Such a course cannot possibly be within the spirit of this very important and world renowned heritage asset. This whole A303 project and improvement is going to happen eventually – later if not sooner. For goodness sake can it be got on with now and release Stonehenge from this present anomalous situation.

I hope I am not out of order making this representation at this late stage, but it is only just recently available in a presentable form. Please would you confirm receipt of this mail. Please confirm that the attachment opens satisfactorily – it contains 53 pages – derived from the source material below. Thank you.

Yours faithfully, David Dann. (Full manuscript – source material – 'Stonehenge 2020 -The Way Forward' at:- www.secsignals.co.uk)

Submission to Planning Inspectorate concerning proposed improvements to A 303 Highway at Stonehenge Wiltshire.

Dear Sir / Madam,

I hope that it is not too late to submit the enclosed document. I understand that the current closing date for submissions is 13th August 2020. The enclosed has been drawn from various pages of a newly completed manuscript, that is only just available, concerning the purpose of Stonehenge. This work has only just been completed from several separate sections and drawn into a unified manuscript.

(The completed new manuscript is titled 'Stonehenge 2020 – The Way Forward'. It has been placed on-line – late June / early July – for freely available public access. It can be found at: -- www.secsignals.co.uk . The pages within this submission have been drawn from this manuscript (-actually a slightly earlier proof copy and therefore there are a few very minor alterations, pencil marks, page numbers, etc. but insignificant.)

The enclosed document makes a case for the vital importance of the south-west sector of the Stonehenge Estate, from the main Stone monument itself, as far as the small woodland called 'Normanton Gorse', and the very important solitary, large Round Barrow listed as 'Amesbury G. 15', a distance of c. 1 km. My proposition is that this south-west sector is a very major part of the design and location of the whole Stonehenge complex within its landscape, and that this sector should be given very great priority from the point of view of enhancing 'Stonehenge Complete'.

The south-west sector should, therefore, urgently be 'cleaned up' and the awful presence of the A 303 highway should be eliminated as it currently exists.

Much of my argument and the information here submitted has not before, to the best of my knowledge, been described and emphasised, and I believe that the whole will put the prospect of removing / hiding the A 303 into a new and urgent light.

From the point of view of the original and intended function of our Stonehenge, this part of the Stonehenge Estate, with its attendant over-loaded traffic highway, does not appear to be fit for purpose.

See the full manuscript at:-

www.secsignals.co.uk

‘Shambolic Stonehenge’ – The ‘Long View’ from atop round barrow ‘Amesbury G.15 in the south-west sector of the Stonehenge Estate, c. 1 km from the stones. This round barrow marks the end point of the most important (but previously not described) axis of Stonehenge that is one of the primary bases of the design, location and functioning of the whole monumental complex.

This axis is far more important for the understanding of Stonehenge as a whole than the more well-known axis towards mid-summer sunrise in the north-west sector. It is the primary feature connecting the stone monument to the landscape and, when Stonehenge was planned, four and a half thousand years ago, was part of a functioning ‘light show’ planned and then created by the original architects.

See how, in our modern era, we have contrived to have a major, over-crowded highway cutting clean across this feature. The A 303 highway, certainly in this south-west sector, should be removed / hidden as soon as possible. It is an insult to the creators and the builders of Stonehenge who worked so very, very hard to create the foundations of our nation. Furthermore it completely ignores the intellectual achievement that they bequeathed to us.

'STONEHENGE 2020 – The Way Forward' (Title of Manuscript)

Details Relevant To The A 303 Improvements at Stonehenge.

A Principal 'Stellar' Axis in the South-West sector at Stonehenge, oriented in the landscape to a distance of 1 km. How and why it is there and works. (Why this axis conflicts with the A 303 which should be removed in some way.)

1).Pps 19 – 29:- The 'Stellar' Heelstone. Much early work provides a basis for this subject. Includes good pictures and diagrams of the subject.

P. 24:- Aerial view of the Stellar Axis from round barrow 'Amesbury G 15 to Stonehenge (c. 1 kilometre), crossing the A 303. To walk this axis to the round barrow involves a dangerous crossing of the A 303. Following my current introduction of this work into the public domain, there are likely to be significantly more pedestrians attempting to cross the A 303 in this area – horrifying!

2).Pps. 121 – 132:- (With important summary Pps 134 – 135.)

- The identification, construction and purpose of the principal Stellar Axis for Stonehenge that starts from barrow G 15, and then reaches and passes through the centre of the Stonehenge monument. This stellar axis is one of the principal features and purpose of the concept and construction of Stonehenge. It is one of the primary reasons why the monument is as it is. But in our times it is now cut by the A 303.

Pps. 136 onwards:- continue s the description from P. 135 above. (P. 144: - 'The whole point of Stonehenge' – Quotation from text.)

3).Pps. 144 – 154:- The 'Reverse' or 'Back Axis', views and astronomy seen from the monument towards the south-west and Amesbury G 15.

P. 147:- Main illustration .

P. 151 onwards:- Explanation of above in greater detail.

P. 152:- Climax of this axis at the mid-winter 'Light Show'. The priority and whole point of Stonehenge takes place from the south-west sector. ('The mid-winter light-show' – quotation from P. 152.)

4).Pps 201 – 205:- Final discussion and conclusions about the effects of a clear sun light passage into Stonehenge from the south-west sector / horizon / barrow 'Amesbury' G 15

-'Tweaking' the Light Show.

consequently slightly N.W. of its actual true position at the horizon. By a very fortuitous occurrence (accidental?) the Stonehenge horizon at Durrington Down has an elevation, as seen from Stonehenge, of circa. 0°30´ - sufficient to largely negate the effect of refraction and cause SSSR to physically appear almost at the correct astronomical time and place. Therefore the calculated azimuth value for sunrise, for B.C. 2340 of 49°38´ is very close to the actual observed occurrence. It is also the azimuth value of the N.W. (left hand) extreme edge of the Heelstone as measured from geometric centre.

The Heelstone showing how the left-hand (North-West) flank pointed to the pre-historic Summer Solstice Sunrise, c. B.C. 2340, viewed from the centre of Stonehenge. The exact Azimuth bearing of the sunrise for this date was 49° 38´, which is precisely the outer extremity of this flank. This Azimuth also takes the line of vision down the 'Avenue'.

This very important detail of sightlines against the EDGE of stones will be a recurring theme and principle within this text. For the moment it is very important to point out that, where sightlines are involved passing stones, then the sharp edge of any particular stone does give a very accurate alignment.

From the foregoing it can be seen that N.W. (left hand) edge of the Heelstone provided the most obvious sightline for Stonehenge at SSSR B.C.2340. This is also the azimuth that gives a sightline into and away down the Stonehenge 'Avenue' towards Stonehenge Bottom and the Long Cursus across the valley. Because it and the rising Solstice sun have always been so obvious this azimuth, view and sightline have come to be regarded as THE axis and purpose of Stonehenge. The sunrise was the 'Main Event'.

(B). The Stellar Heelstone

We can dig further. There is a second clear alignment and AXIS that can be demonstrated within the dimension and planning of Stonehenge. It is more important than the Summer Solstice Axis of part (A). This second axis uses the other, N.E., edge of the Heelstone as viewed from the centre of Stonehenge and is a very long and therefore precise alignment.

The Round Barrow 'Amesbury G 15' stands away from Stonehenge in an approximately South-West direction, in the grass field beyond the main A303 road. In our era it is the only Round Barrow within this large field. (There is no evidence that there were ever any other barrows within this area and close

to G15, which is slightly unusual in itself because so many barrows within sight of Stonehenge congregate together as members of 'Barrow Cemeteries' built in local groups or 'strings'.) It is a very large barrow , both in area and height, quite distinctive in the landscape. Indeed it is considerably larger than the nearby famous 'Bush Barrow', burial site of a famous hoard of 'Wessex gold' warrior ornament and weapons, or its neighbours.

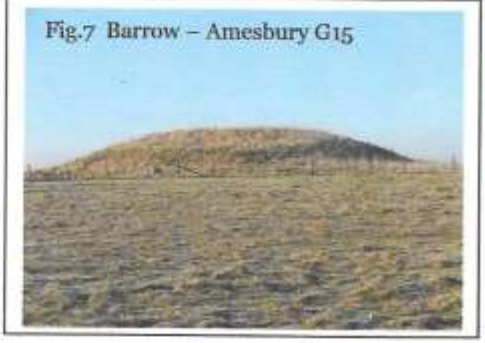


Fig.7 Barrow – Amesbury G15

The distance from Stonehenge centre to G15 is circa. 960 metres (1050 yards). From Barrow G15 the 'Stellar Alignment' or Axis reaches and passes through Stonehenge very precisely towards the 'Long Cursus' and the area at the skyline of Durrington Down that is close to the sunrise point of the summer solstice axis of part (A) above. From Stonehenge to the top of Durrington Down the distance is circa. 1900 metres (2100 yards). Sadly Durrington Down is presently obscured beneath semi-mature woodland and the ground surface has long been unseeable. Also the army has been established along the top of Durrington Down for many years and there is evidence, in the form of ancient heaps of concrete around the area in question, that they have probably 'worked' a lot of the ground surface at various times. Therefore there currently seems little chance of finding any significant evidence of pre-historic land-marks indicating earlier existence of sightlines from Stonehenge. Even so it would be a very worthwhile exercise at some time in the near future and well within the resources of English Heritage / The National Trust if an 'alleyway' could be established up the hill, through the area of woodland along the distant view from Stonehenge to the top of Durrington Down, to demonstrate the total potential sightlines of Stonehenge as originally created.

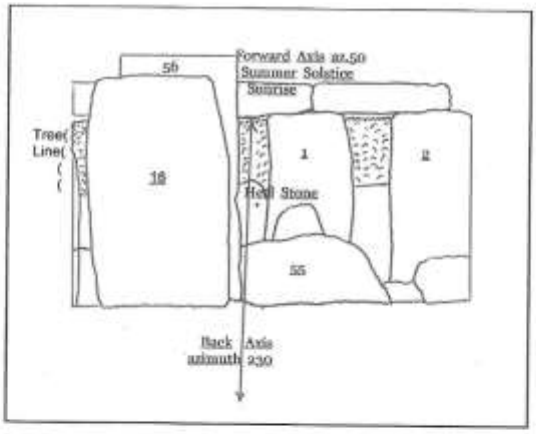

Fig.8. G15 – 'Welcoming Committee'


Stonehenge – The 'long view' along the Stellar Axis, from Amesbury G 15 and through the monument touching the Heelstone

The establishment of such a vista (that would work both ways – from Stonehenge to the distant skyline, and also (very importantly) - back from the skyline, down the hill, through the centre of Stonehenge, and beyond to Amesbury G15 – a distance of circa. 2860 metres (3150 yards, or more than 1¾ miles) would be well worthy of the importance and significance of our most famous pre-historic construction and well suited

Closing in along the Back Axis, and Main Stellar Axis. View from within the boundary fence.

Almost up to the Sarsen Circle, slightly offset to the left-hand of the Back/ Main Stellar Axis. The Heelstone can now be seen through the monument. (Because this sight-line is fractionally offset we cannot quite see the Heelstone 'notch'.)



to its status as a World Heritage Site. The 'avenue' down through the woodland, providing such a completely new, to our era, view of distant Stonehenge and through to Amesbury G15 would be a grand preparation for the proposed 'hiding' of the A303 that may happen sooner rather than later. The whole Stonehenge site and its setting would become far bigger and more impressive within its setting of 'wide open spaces' and, who can say, such an impressively enlarged site, extended sightlines and vistas could become the final catalyst that would provoke the current ruling power within Central Government to give the go-ahead and provide the funding to finally 'bury' the A303, sooner rather than later!

From the top of Barrow Amesbury G15 one can, through good binoculars or a powerful camera lens, see the sight-line clearly as it passes through Stonehenge. As it enters the Sarsen Circle it grazes the East edge of Sarsen upright no. 16. Then it grazes the Eastern edge of Great Tri-lithon upright no. 56. (In ancient times this would have been THROUGH THE VERY NARROW SLIT of the Great Tri-lithon archway of 2 uprights 56 and 55 with the top lintel high in place above. A very important alignment that demanded perhaps the greatest effort of all within the construction of the Stonehenge 'project', because of the

tremendous precision that was required here combined with the size and weight of this particular group of stones, the largest of which weighed in excess of 40 tonnes.)

The sightline passes through the centre of Stonehenge and then out through the other side of the Sarsen Circle grazing the West edge of Sarsen upright no. 1. Then it passes the east edge of the Heelstone, close to but not quite at, the full width of this stone but very close to the significant visual 'NOTCH' that occurs halfway up this East edge.

In actual fine detail, the Heelstone East edge and Sarsen Circle upright no. 1 West edge each slope slightly from the bottom upwards. The actual, on-site effect of these two edges, as seen on this long alignment, is to form a clear 'V' notch, almost at the point of the other 'notch' in the side of the Heelstone. The modern analogy is with the 'V' notch of the fore-sight of a rifle. The whole effect as a means to emphasise the importance of this alignment is very effective.

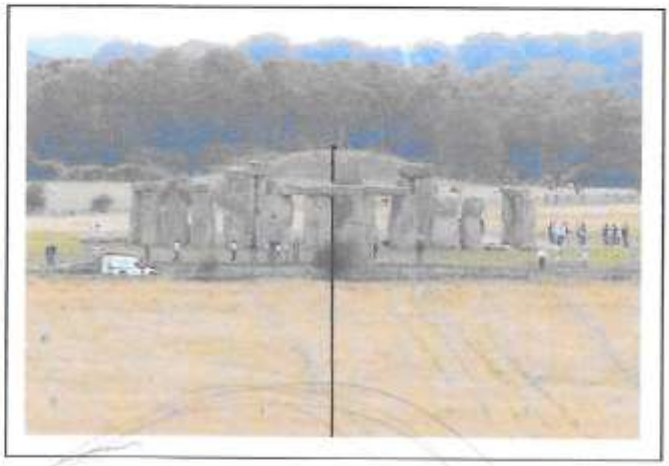
Finally the sightline continues across the valley and, as a level line, makes landfall on the long 'CURSUS' below the side of Durrington Down. Unfortunately there is not visible any mark such as a stone pillar or small stone circle to mark this point.

(A) The Summer Solstice Alignment Axis
View from Cursus (N.W.) into Stonehenge along the 'Avenue'. (The 'Avenue' is shown as the two parallel 'lines' across the grass field.) The Heelstone can be seen next to the bush, nearly central to the Avenue. It can be seen that the sightline passes to the Right-hand (N.W.) edge of the Heelstone and on to the centre of Stonehenge. Barrow Amesbury G 15 is visible in the right-hand background.

It is a very long view to be certain of this sightline from Amesbury G15 without some form of binocular or magnifying camera lens which demonstrates , firstly, how far-seeing were the builders, and secondly how exceedingly and astonishingly accurate they were in the placing of the great Sarsens along this alignment. A very small error sideways in either direction in the placing of any of the significant Sarsens used here (including the two biggest Sarsens of all, nos. 55 and 56 of the Great Trilithon archway) would have completely ruined the effect. And would have possibly eliminated the information that is still now implicit within this alignment, and that has survived for many millennia

until its be rediscovery. We owe these people so much. They gave so much for our future.

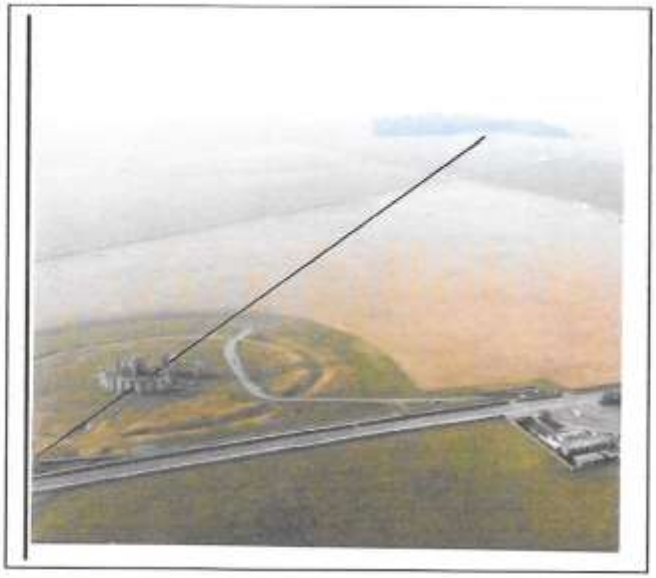
This second 'STELLAR' axis of Stonehenge does not align with the 'AVENUE' that leads up to the Stonehenge entrance from the valley of Stonehenge Bottom.



(B) The Main Stellar Axis from the Cursus.
Barrow G 15 frames perfectly the monument and especially fits to the profile of the tops of the Tri-lithon Horseshoe. The Main Stellar Axis passes to the left-hand (S.E.) of the Heelstone (partially obscured by the bush), and grazes the edge of central Tri-lithon upright no. 56 before continuing to the centre of G 15. The two views, this one and the previous view along the Avenue, demonstrate very clearly the difference in alignments purely down to the apparently insignificant width of the Heelstone, when stretched out across the landscape.

The two different Axes are very clearly viewed from the Cursus, across the valley below Durrington Down. It is very easy to see how the SSSR axis, to the North-West edge of the Heelstone aligns with the Avenue that can usually be seen fairly easily from this direction. This alignment of Avenue and Heelstone edge to Stonehenge centre is the most obvious feature. There do not seem to be any other obvious features within the landscape.

The back-view for the STELLAR alignment can also be seen from the Cursus and looking into Stonehenge, from a viewpoint on the Cursus a short distance East of the SSSR viewpoint. From the Cursus one can align the four upright Sarsens that I have just previously described. (Heelstone (east edge) – Sarsen Circle entrance upright no.1 (west edge)– Great Tri-lithon upright no.56 (east edge) – Sarsen Circle upright no. 16 (east edge). (The large thorn bush on the roadside of the Devizes road spoils the effect slightly – how perverse that there should be one single solitary bush exactly in this spot to visually interfere with this alignment.) The visual effect that underlines this alignment spectacularly is the apparent great bulk of Round Barrow Amesbury G15 'rearing up' precisely behind Stonehenge. It is perfectly placed on the STELLAR alignment that I am already trying to describe above. And the size is absolutely correct to frame the Horseshoe of Tri-lithons. –Another fortuitous co-incidence? Undoubtedly not. And if we can accept that this barrow was built in this position and to the size that it is to confirm, frame, demonstrate the long STELLAR Axis, then again we have extracted more very important information from Stonehenge.



Pre-historic 'target practise'. The Main Stellar Axis originates atop Barrow Amesbury G 15 (here just in front of the distant woodland), and 'fires' exactly through Stonehenge to graze the N.E. flank of the Heelstone at the 'Notch', half way up. A distance of just below one kilometre.

Personally it is my opinion that this is one of the very best views of Stonehenge, it is certainly one of the most important. The view should be printed at poster size and distributed widely as a monument to the ingenuity, perseverance and precision of the builders, and as an example to our modern race of what can be achieved with a 'can do' attitude. Stonehenge may be dwarfed in physical size by many other ancient monuments around the world, but it is my own long-held opinion that this particular view encapsulates and unlocks an enormous amount of knowledge.

The Azimuth value of the long STELLAR AXIS, viewed from the centre of Stonehenge, is circa. 51°50´, as near as can be ascertained at this stage. Taking the two separate Heelstone outer flank azimuth values as:-

N.W. (SSSR Axis) flank	49° 38´
N.E. (STELLAR Axis) flank	51° 50´
Gives a mean (average) value of	50° 44´ for the two

axes (and is close to the centre line of the Heelstone.)
The azimuth value of 50° 44´ is very close to a value of 50° 43´ and this second value should be kept firmly in one's mind as I will return to it in a most important context further on in this text.
The azimuth value of 50° 43´ will be shown to be of the greatest significance.

It is worthwhile commenting here on the problem and method of obtaining reasonably accurate values for the Stonehenge AZIMUTHS of these two Stonehenge AXES. Various methods have been used over several years.

The first problem that one comes up against is the difficult access to the central area. Early visits in the 1960's to the central area were unfettered and unobstructed. One parked in a pot-holed lay-by next to the Devizes road, paid one's shilling or whatever and, once through the iron swing gate, could wander at will across a peaceful, near-empty site, even climbing on the easier stones for photos. In those far off days Stonehenge belonged to the birds, the wind, and the common man.

During the 1970's the human race discovered Stonehenge and the complicated barrier / tunnel, car park, shop, etc. set-up arose as the monument became perceived more to be a money generating complex. At the same time access to the central area became severely restricted, only by prior booking at very early or late times of day if there was a slot (not too easy in the summertime). Also it meant advance booking, initially by phone / post – which meant advance planning and taking a chance with the weather. 'Cause and effect' – Popularise the monument – sell it hard to the tourist hordes – by weight of numbers they trample the ground – so we have to keep them away - but at the same time we need their money!

But, since then the 'Empire Builders', the Accountants, and the tourist 'Industry' have cranked themselves up into 'Full-on' mode. Now Stonehenge is a distant dot in the landscape as the 'Experts' and our 'Heritage Guardians' shuffle millions of half disinterested tourists through their 'essential Stonehenge experience' on their rushed sight-seeing schedules. And charge the common man a stupid price in the process! The opinion of one who has known Stonehenge for longer than I care to reflect is that the 'New Stonehenge' is horrible – ghastly – a sad reflection on the minds and outlook of the new generation of 'owners' – of the modern, cynical, 'make everything work for the money' generation! At the same time access to the monument is more 'complicated' for the passing traveller wishing to stop by on their journey for a quick re-visit to pay homage to an old friend, or check out some small detail raised during their studies. I count myself lucky to have been able to work in that rare slot in time during the 20th century when access was reasonably possible and new knowledge was flaring up, before commercialism became the raison d être of everything.

It becomes apparent, very early on in Stonehenge studies, that a considerable degree of accuracy is needed for any measurements obtained. Some aspects of Stonehenge measurement have been well measured and published. They are freely available, especially scale plans and drawings. There is very little work known concerning the position of Stonehenge within its landscape relating to angle and bearing linked to the Earth and its position within the Cosmos., horizontally or vertically. By this I mean that it is well nigh impossible to find information concerning the relationship of Stonehenge to our Earth Polar Axis or Celestial Equator. Astronomy can supply information about observational aspects of just about any Celestial object or phenomena to several decimal places but try to get an accurate fix on Stonehenge? – not so simple. The reason is probably that Stonehenge has traditionally been the domain and provenance of the archaeological fraternity certainly since the advent of modern science. Enthusiastic and helpful as archaeologists generally are I have never heard of one who will embrace and understand astronomy. Consequently it is normal for attempts by enthusiasts to demonstrate astronomical links within Stonehenge to be quickly 'attacked', buried, even rubbished by its 'guardians' of knowledge. This is so sad. Encouragement, even to the point of some archaeologist taking up the hobby of star-gazing, would be so encouraging – and progressive. It might even progress Stonehenge studies. All knowledge must be good. Any knowledge must be good. Perhaps ignorance is bliss!

As with all measurement, accuracy is needed to measure, justify, explain the two AXES described previously that are present and pass against the two edges of the Heelstone. It is not possible to stand at the centre point of Stonehenge, point a magnetic compass, and obtain a result that is satisfactory for further investigation..

Early attempts were made by measurement off of Ordnance Survey maps / officially published site plans. It is probably possible to get to about 1° of accuracy but this is of little use for modern astronomy, and when trying to relate to the possible ancient astronomical information implicit in the design. One major problem, if attempting to derive necessary bearings for an axis is that there are no distant marks obvious on Durrington Down. Rather the whole flank of the Down is heavily wooded with a very consistent cover of semi-mature beech trees.

Another attempt was by use of 'Google-Earth' that came about in the 1990's. The satellite produced imagery that became available was quite useful as the 'photos' also contained geographical indicators for latitude and longitude. But visual resolution was not high and was hardly up to defining individual stones let alone their precise edges.

Pocket sized 'Garmin' type satellite navigation devices then became available, deriving their information, once more, from the Earth satellite system that was now in place. They could be used to fix points on the land surface to within about 1 metre or so. Their usefulness, again, was compromised, for the amateur, by the difficulty of access generally around the stones of Stonehenge. Unless one actually knows, by regular acquaintance, 'somebody in charge' at Stonehenge or is a recognised 'archaeological expert', one always comes up against this further man-made barrier. Notwithstanding this, the satellite navigation device did permit of fixing points that are further out in the landscape.

The final means that was able to confirm, or otherwise, bearings for the two Axes obtained by other methods, was to mark and time the shadow of certain upright stones, timed by satellite clock, and then relate this back to astronomy data available as computer software that can relate precise timing at precise geographical location to common astronomical events. (The procedure employs certain Stonehenge uprights as a giant sun-dial combined with modern, precise, digital position / time data. What could be more ironically appropriate than good old pre-historic Stonehenge as part of a modern, digital, scientific instrument?) This procedure had to be carried out close to mid-winter when the sun was reasonably low in early afternoon, but the sky needed to be clear so that clear-cut shadow could be obtained. (Therefore it needed dry and frosty weather in February / March.) For each of the two Heelstone Axes alignments required, a flat white screen / tall narrow vertical marker stick was set up exactly on the relevant alignment of Axis / Great Trilithon upright no. 56 inner (S.E.) edge at a distance beyond the Heelstone, in the grass field on the opposite side of the Devizes road from the monument.

The Main Stellar Axis. Alignment of edge of Tri-lithon upright no.56 – Heelstone N.E. edge. The Heelstone target 'Notch' can just be distinguished as the rough area in the flank-2nd full line of fence mesh from the top.

Preparing to catch shadows. The tall pole is a gnomon to mark the progress of the sun. The rear of the white screen is in this view, but the whole is indistinct from this side because the camera is facing the sun to show this view of the set-up.

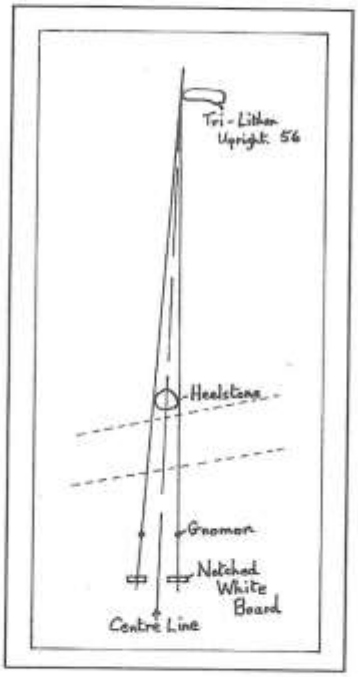


Diagram of the set-up. Very simple and using Stonehenge to locate itself by its own shadow. Is this a copy of practises happening here more than 4500 years ago?

The setting of each marker was initially fixed visually on each Axis : - Heelstone N.W. edge / N,E. edge ('Mouth of slit' feature) – vertical E. (inner) edge of Great Tri-lithon upright no. 56. (These two Axes already defined earlier in my text as SOLAR AXIS / STELLAR AXIS). As the afternoon sun descended towards, and then, ultimately, behind the Great Tri-lithon, its long shadow was cast that moved steadily on to each vertical white screen and then aligned with the vertical marker stick shadow. By careful satellite timing, as the shadow crossed each screen and reached the previously visually positioned Axis alignment vertical marker, it was possible, with care, to record the time, which was actually the time of LAST CONTACT of the solar disc.

Knowing date / time / geographical position it was then a straightforward exercise to obtain the Azimuth bearings for these two axes from astronomy software and correct them from 'last contact' of solar disc to 'mid-disc'. The results, as given, were for 'Back Axis' (i.e. S.W. direction) and easily converted to N.E. (Durrington Down horizon direction). Results obtained were:-

Heelstone Axes Azimuths

N.W. Edge (SOLAR axis)	Azimuth	49° 38′
N.E. Edge (STELLAR axis)	Azimuth	51° 34′
Mean of the two values		50° 36′

Some comments can be made:-

(i) The results use the shadow edge or LAST edge of what would have been the Great Tri-lithon archway. The archway would have had width of a few arc minutes and so this might give these azimuth values a slight variability.

(ii) The N.E. edge used, continues to slope outwards as it approaches ground level and therefore there is slightly more width at ground level than at the point actually used at the 'Mouth' of the 'Slit' that is visible on the inner face. (In total the extra width is c. 0° 10′.) Therefore the value for the Stellar Axis would be c. 51° 44′, and the mean, or average, value for the two azimuths would be 50° 41′.

(iii) The mean (average) value obtained is the value for the CENTRE LINE of the Heelstone. As can be seen from all of the above, the truth lies somewhere between 50° 36′ and 50° 41′. This is a very 'fine' difference, hardly even detectable in surveying. The values for this group of azimuths, as here recounted, are also of vital importance further on in this text and should, here, be well remembered.

(iv) 49° 38′ is PRECISELY the azimuth of rising for the sun at SSSR BC 2340. From this fact of the correctness of the position of the Heelstone with its N.W. flank exactly marking this solar event, we can confirm that it is the FLANKS of the Heelstone that are significant. And we can also deduce that it is the FLANKING

EDGES of other stones that are of significance. It also confirms that this particular date, or very close, is very important to Stonehenge.

(v) Using the falling shadow of the Tri-lithon upright in early afternoon when the sun is at low altitude for a limited season on either side of the winter solstice has raised yet another possibility that may have been exploited at the time when the monument was newly built and in better shape. On bright, sunny afternoons and with a low sun, at a time when the central Great Tri-lithon archway was complete, there would have been an impressive shadow effect containing a very bright and long-reaching shaft of sunlight that swept steadily across the central zone of Stonehenge and, when the sun was very low, reaching out forwards to the Heelstone and beyond. For a few moments, each day in midwinter, the face of the Heelstone would have been very brightly lit whilst the surrounding area was in the relative darkness of shadow. How this actually looked and what it actually meant to the Stonehenge people is speculative, but it is difficult to believe that it was of no significance and completely ignored. (Later in this text this detail has certain relevance to the question of the finished form of the central Bluestone Horseshoe.)

These Heelstone Azimuth results also correlated reasonably closely with results obtained from 'Google- Earth' and 'Garmin' satellite tracker device.

It is time to break off from this part of the subject for the moment and move on to a new area.

ALTTTUDE: CIRCLES, GRIDS AND ANGLES.

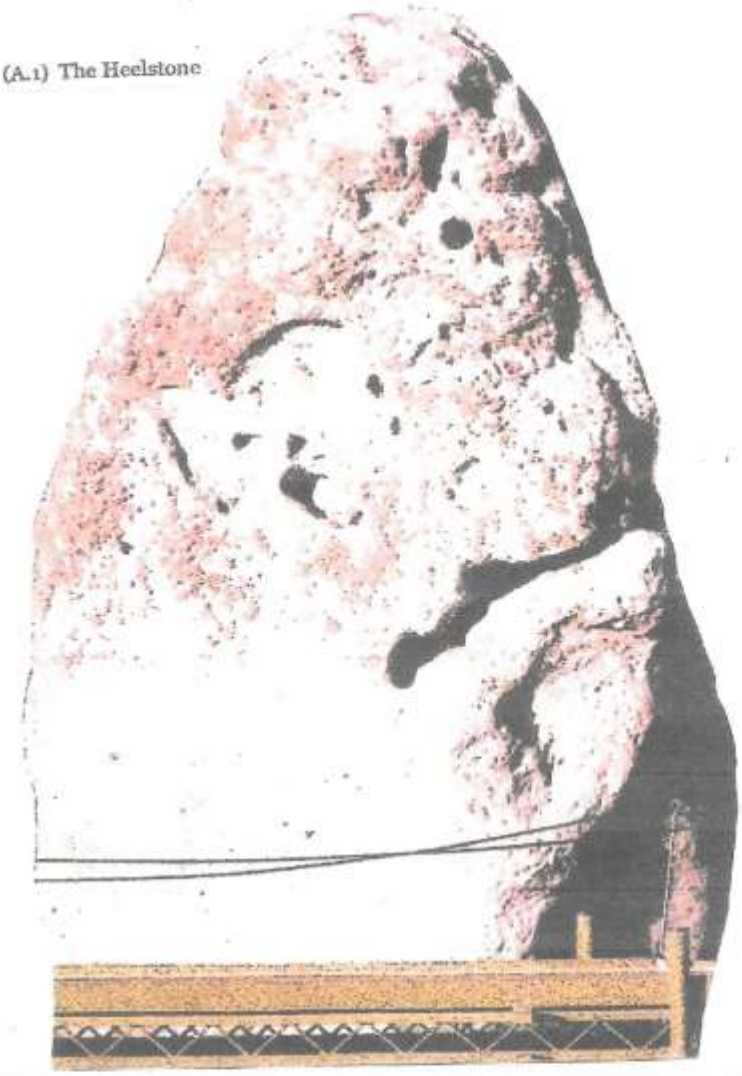
THE OUTERMOST SARSEN CIRCLE of uprights with horizontal lintels on top that forms a ring of archways.

My first proposition is that a primary objective of the designer was that this circle should be seen as the boundary of the visible Cosmos – the Celestial Hemisphere visible from their horizon, and that it could contain representation of any cosmic events to which they had particular interest, or that were of special significance. To them the Sarsen Circle was the boundary of the Cosmos and the zone where Cosmos came to Earth and joined up with the visible world in which they dwelt.

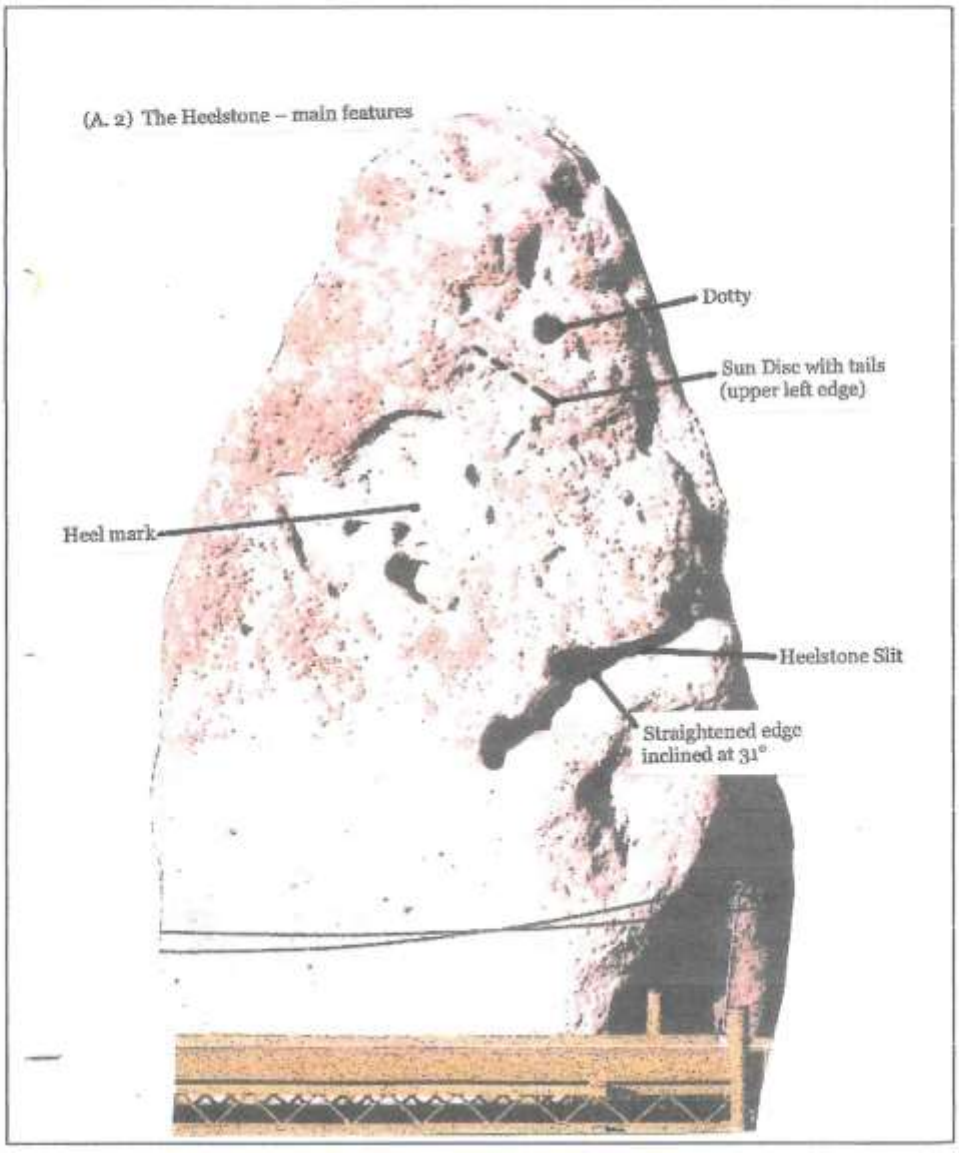
Stonehenge was never conceived primarily as an astronomical observatory. Although the plan and structure contain information relating to many astronomical events it was never intended as a means to discover new knowledge. The knowledge that is implicit in the various aspects of its design was known – had been obtained – elsewhere and over long periods of observation before ever the planning and construction was started. Consequently we can go forward with interpretation on the basis that we are 'reading' a 'book', or deciphering a record of knowledge already achieved. As cosmological knowledge is universal and constant through time we need only apply data that is easily available to all of us. We just need to 'wear' the correct eyes.

(A.1) The Clean Heelstone Picture A.2 shows the same view with main features picked out and labelled.

(A.1) The Heelstone



(A.2) The Heeklstone with main features.



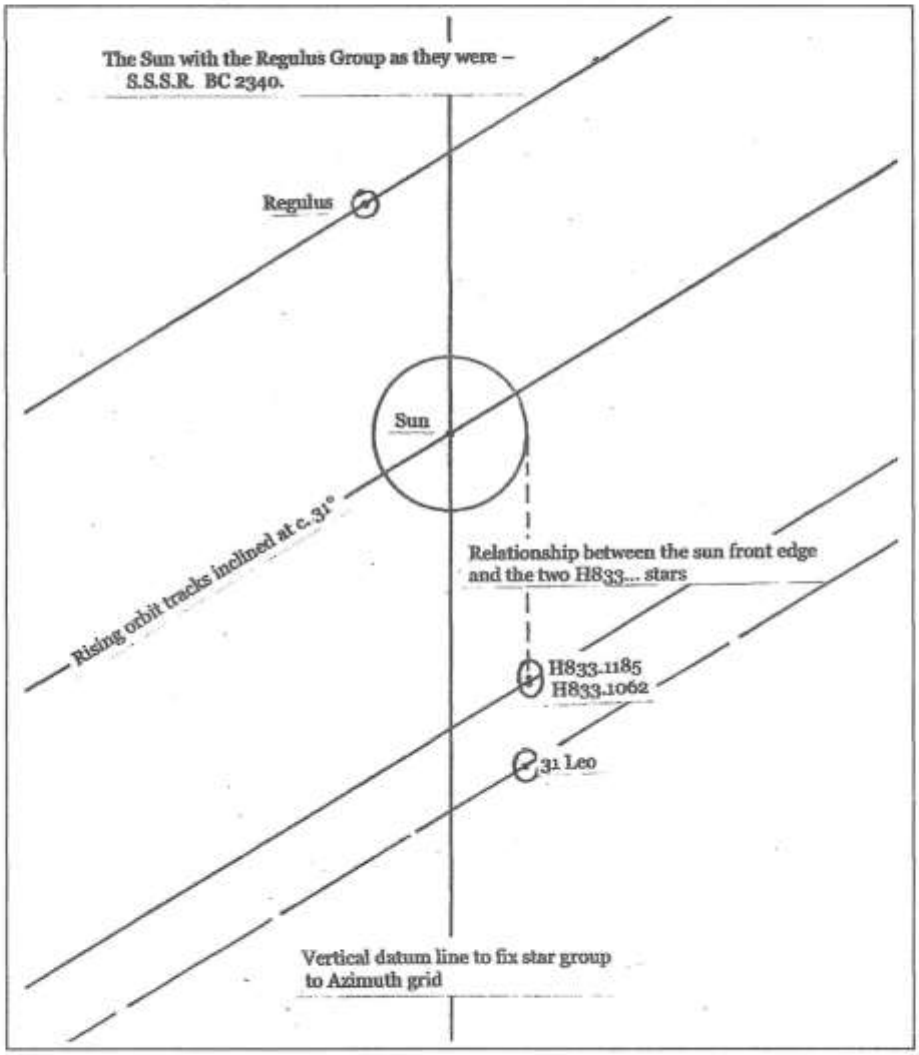
'Clean' Heelstone. The features shown and labelled on the illustration on p.107 are visible here. From upper right hand downwards can be seen;-

- The 'sun disc' with fiery, flaming tails on its left flank.
- Contained within the disc is the deep, very smooth, circular 'cupmark' labelled' Dotty'. Very black, very prominent even from a distance.
- The famous 'Heel mark' that has given this stone its name.
- The Heelstone 'slit'. This deep fissure running diagonally up the middle of the stone from left to right, looks so very natural. Perhaps much of it was originally. But a line, up through the slit and inclined at 31°, goes the full length including the very straight central part, just as the beams of light once

cut along the passageways of many of the Irish Passage Graves for astronomical reasons. The widening of the slit at the bottom (a chamber?) is also very reminiscent of the inner chambers of the Passage Graves. This detail will become of very great significance shortly. (31° is the angle of inclination of rising celestial orbit tracks in this current scenario.) Who 'straightened' the edges, so correctly, in ancient times? The bottom, central, start of the slit almost precisely touches the central azimuth line of the Heelstone at 50° 43'.

- At the top of the Slit is the 'Exit' or 'Mouth'. Once again a seemingly minor and insignificant detail of the Heelstone to any casual observer, this little detail will shortly be seen to be the whole focus of the Monument, the focal point of a very complex, very precise plan

(B) The Regulus Group and Sun. S.S.S.R. BC 2340. Azimuth c. 50°



Regulus group and Sun BC 2340, sunrise, summer solstice. North-east horizon azimuth c.50°, altitude c.00°.
The group, (in constellation Leo), contains the bright, naked-eye visible star Regulus (alpha Leo) at the top; The much less visible 31 Leo at the bottom. So far as other stars are concerned this is a fairly thinly populated part of the galaxy compared, for instance, to the Milky Way. But it does contain the two very distant and obscure stars H833.1062 and .1185 that are only visible through a powerful telescope. Regulus lies very close to the ecliptic.

Once per year the Sun and Regulus are in very close proximity to each other as the sun travels on its annual circuit, along the ecliptic, and through the constellations of the Zodiac. (There are very few bright stars that lie close to the ecliptic but Regulus does.) Uniquely Regulus and sun just happened to have their very closest passing exactly on the day of summer solstice circa BC 2340. Because of Precession of the Equinoxes the relative positions of sun and stars slowly and steadily changes with the passage of time. The near union of sun and Regulus, at summer solstice, had not happened previously and will probably never be repeated. It was a unique and one-off event. It just happened to occur at about the time that archaeology now believes that Stonehenge had been more or less completed sufficiently to use just after mid 3rd millennium BC.

That is one of the reasons why my Stonehenge project is all based upon summer solstice BC 2340. (It should be remembered that none of these stars are visible by day or when the sun ic close to rising or setting – twilight. And none are likely to be visible close to the horizon due to Earth atmosphere. But again this consideration will come into discussion further on in this script.)

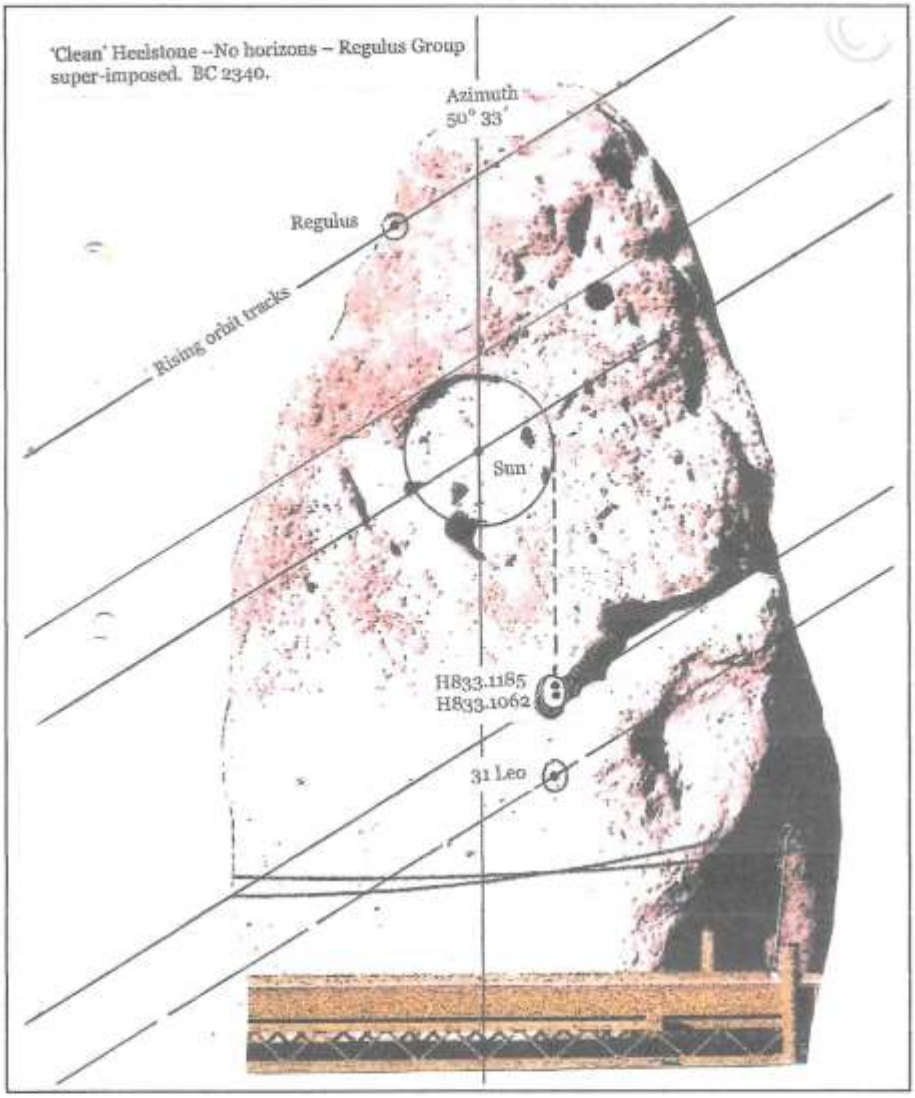
The two stars, Regulus and 31 Leo give a reference point to help locate the two small, distant stars. Hence the title of 'Regulus Group'. They also serve to orient the group relative to the horizon and Heelstone. Because the group is large enough to be oriented in this way it can be satisfactorily represented within the overall 'picture' as it develops.

My illustration, above, of the Regulus group also defines the relationship between the leading edge of the sun and the two H833... stars. Once again, uniquely (and very astutely) the designer of Stonehenge managed to select the specific date of S.S.S.R. BC 2340 and the meeting of sun and Regulus as the one unique date when the sun leading edge (first flash?) would exactly be on the same azimuth value as the two H833... stars. In other words the sun leading edge and two stars would be perfectly aligned vertically just at the moment of sunrise at the summer solstice. In other words, if these three could be aligned against a vertical face at sunrise then all three would rise together.

The other star to mention is the sun. Its form and position are clear enough. There are all sorts of subtleties about its shape and slightly curved rising orbit, refracted diameter, etc. but these matters are not required here. For this exercise it has a diameter of c. 31/32 arc minutes. As position is normally quoted for centre then adjustment has to be made for timing of first or last flash for rising/setting. Its azimuth bearing is very slowly changing through

time but this is insignificant over a short period. Suffice to say that the sunrise/set that we see in our modern era is about a degree further along the horizon than it was at the time of the building of Stonehenge. This can distort an attempt at trying to recreate summer solstice sunrise as it was then.

(C.) Connecting the Heelstone and Regulus Group



It is now possible to put together Heelstone and Regulus Group.. The Regulus group is shown superimposed on to the Heelstone. No horizon background.

This is an astronomical 'picture' obtained by linking many of the prominent features on the face of the Heelstone, applying the actual rising celestial orbit tracks, inclined at c. 31° to horizontal, and scaling the relative separations – vertical and horizontal – of the various objects to match the angular dimensions within the size of the Heelstone. (I.e. The Heelstone has angular dimension for the horizontal that corresponds to altitude in this scenario, and angular dimension for vertical that corresponds to azimuth.)

(It is worth noting at this point that the Heelstone, when viewed against a distant horizon, does not have its own angular values. Rather, it becomes part of the whole picture and adopts and shares the same values as that distant horizon. Visually it becomes a part of the big picture. The horizon has angular values and the Heelstone can be viewed against that horizon and its values. But the Heelstone can only share the same angular values as the horizon if it is that horizon that is the objective. To try to calculate and impose angular values on the Heelstone itself would be a fallacy. One can only impose the features of the Heelstone, as seen, on the view. Any celestial movement across the Heelstone has to be applied at the same scale as the distant horizon, with the Heelstone itself against that horizon.)

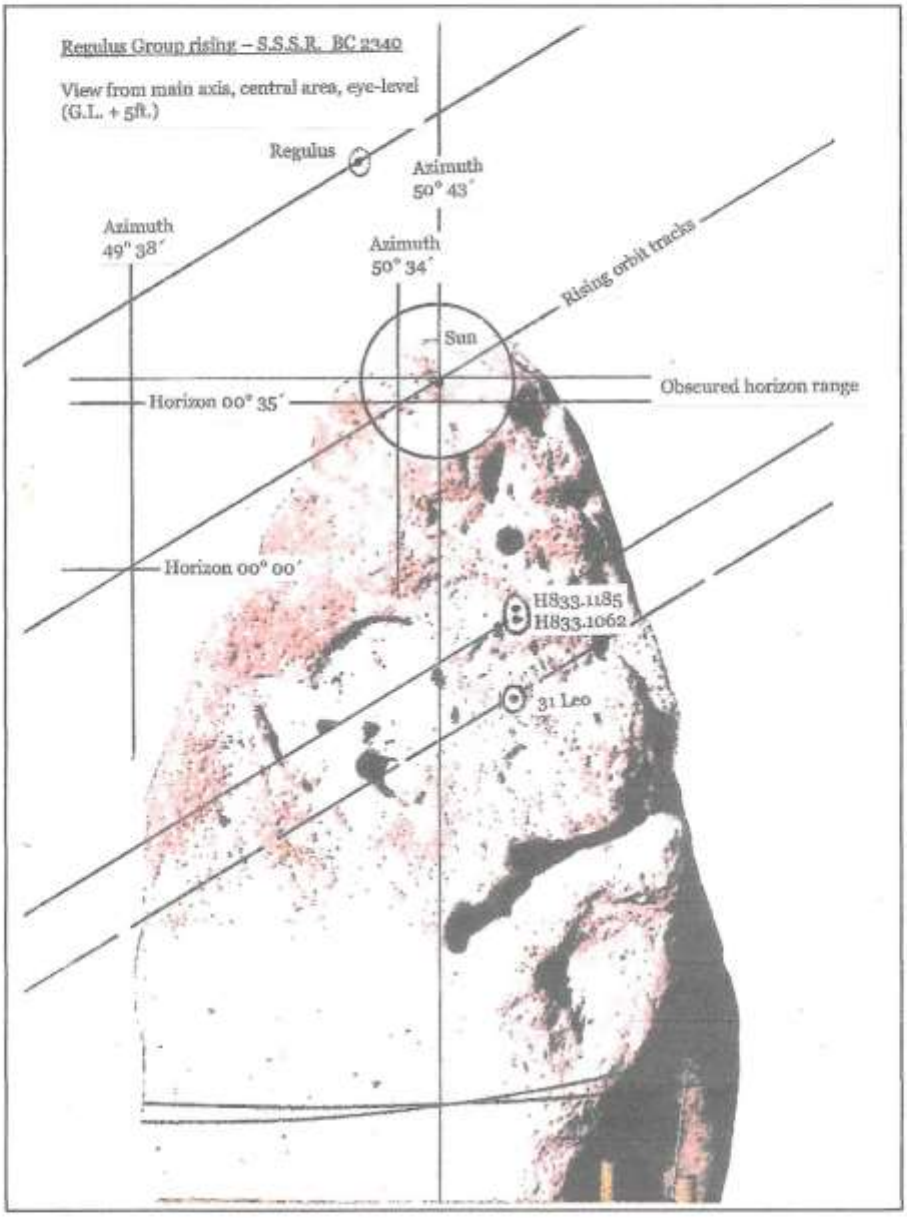
An orbit track at 31° inclination for the top edge of the sun circumference connects the top edge of the 'Heel' mark and its lower top point with the top edge of the deep and very circular 'Dotty' feature at the top right hand sector. The fit of sun and Heelmark is remarkable – almost as though intentional? (Bear in mind that scaling of sun and stone are identical.)

On the top left hand flank of the Heelstone Regulus fits very neatly and conveniently into the small notch of the, otherwise very straight, Heelstone edge.

Lower down and centrally placed on the face of the stone the two H833... stars sit exactly within the lower chamber of the Heelstone Slit. Their position is exactly below the leading front edge of the sun disc. Their orbit track, ahead of them, should take them exactly up the slit, grazing the 'straightened' section, depending upon which of the two is given priority.

The other larger star, 31 Leo, does not appear to fit any significant features. It is included onto the Regulus group to give scale and orientation.

(D) Sun and Regulus Group Rising. S.S.S.R. BC 2340
Main axis, Central area, Eye-level (c. 5ft.)



Horizons. The aspect from different view points can now be considered. It will be remembered that I described, just previously, how the viewing point across the Heelstone could be varied by moving up or down the main axis, towards or away from the Heelstone. That is the reason why the design of Stonehenge never included a clear and specific viewing point. Because the viewing point and the visual relationship between Heelstone and Durrington

Down horizon could be varied to give more than one 'situation' using the celestial picture on the Heelstone face.

In this first actual view, the viewing point is Stonehenge central area, main axis, 'eye-level'. This position has effectively elevated the horizon of Durrington Down to a point that it is about level with the top of the Heelstone. (Or 'lowered the Heelstone – manipulated it - to the required position. Imagine a full-size wooden or cardboard copy of the Heelstone complete with all surface markings that could be manipulated up or down as required.)

Again this is not a very precise point. It obviously depends upon the height of the eye. (I have used c. 5ft. / 1.5m as a demonstration. I do not have any other figure for the average eye height of Late Neolithic people.) It is actually a practical viewpoint and view. The eye position can be adjusted here or there so that the observer can feel that they are witnessing and generally 'absorbing' the important 'moment' , whilst not needing to see with precision. It is the practical, popular view – non-specific, precision not needed.

It is the 'classic' or spectacular view of the Stonehenge Summer solstice sunrise and would have been good for several days around the solstice, and for many years before and afterwards into the future so long as people were happy to see what they expected and hoped for. The sun has risen slightly to the north west or left hand of the Heelstone tip and climbs to the top to fit for an instant exactly central and, depending on your height, perhaps half-orb on top of the stone. Notice how the orbit track of the ascending sun exactly matches the sloping top left hand edge of the Heelstone. The sun is literally 'climbing up' the side of the Heelstone. For the mass of people who worked so hard to build Stonehenge this is what it was all about. This is what they dreamt of seeing, but several generations were to come and go before the lucky ones made it.

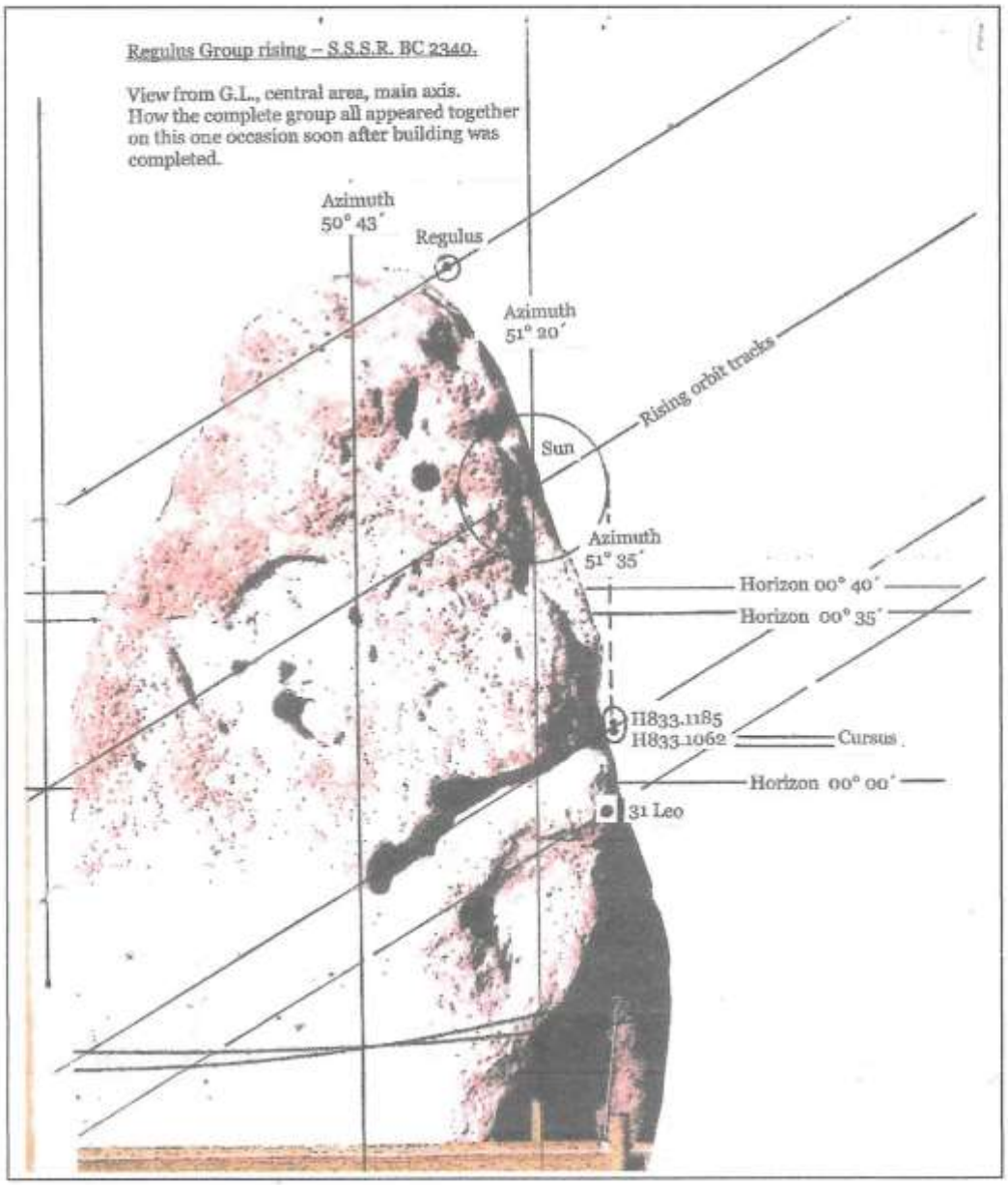
Many commentators, writing books over the years, about different aspects of Stonehenge, have commented that they believe the 'Classic' view of The Heelstone to be the main purpose of the monument. Many of these have commented upon how this Classic view does not quite seem to 'fit' the actual layout; how the sunrise always seems to be 'not quite where it should be'. There is a general feeling amongst the 'non-expert experts' that the view should be of sunrise exactly from the centre; exactly through the centre of the 'Entrance' between iprights nos. 30 and 1; exactly down the centre of the Avenue. Unfortunately 'general feelings,', intuition, 'it seems obvious' are not good enough reasons to accept that a particular opinion or 'widely held view' is correct. (Frequently I find that 'widely held views' are more likely to be 'non-expert experts' repeating views that they have acquired from other 'non-expert experts', ad nauseum, because they are unable to form more cogent explanations themselves but status requires that they say something. In life, and probably in astronomy, it is often the 'odd-one-out' , the anomaly. the slight aberration that gives the clue. The main focus and alignment of Stonehenge was never meant to be this Classic view. That is why solstice sunrise has never fitted with precision. The Classic view was for the buliders, the 'labourers', the 'common man' who could not have understood deeper meaning. (And was probably not too interested anyway.) As this script

develops we shall see reason to identify a far more important view of the Heelstone.

For the designer there was other information within the sunrise scenario, invisble to the naked-eye observer but implicit. We can see, from the plan, that as the sun stood atop the stone, just for a few moments the two h833... stars were within the deep 'Dotty' pit. (For the interest, at this instant the sun centre azimuth value was exactly tight against the edge of the bottom 'chamber' of the Heelstone slit.) As the sun began to progress beyond the top centre and continued to ascend, then the two stars also ascended towards clearing the stone edge. Finally they cleared the stone moments after the rising sun had fully cleared the horizon.

But sun and the two stars did not just clear the Heelstone. It was more clever than that. At the moment that the two stars cleared the edge of the Heelstone they sat exactly on th true zero horizon. In other words they sat within the angle formed by vertical Heelstone edge and horizontal level horizon. But there was more. As they touched this positiopn the sun cleared the top corner and its lower edge just about sat tangent on the Stonehenge horizon of Durrington Down. (Altitude 00° 36´ works better than 35´ - that is how precise it could be.) (Of course this could be a lucky chance!) To the designer the implication must have been clear – at the instant that the sun sat tangent, then the two stars had risen and were now into the sky. This whole scenario unique to just one summer solstice in BC 2340. (Still quite close for a few years either side of that date, but never to be repeated once Precession had caused solstice sun and stars to drift apart.)

(E) The rising of Regulus Group- S.S.S.R. BC2340 Based upon the fit of the group with the features of the face of the Heelstone.



(D) The Rising of the Regulus Group. S.S.S.R. BC2340

This second variant on the horizon theme underlines the ingenuity of the way that the Heelstone was incorporated into the sunrise horizon scenario. In point of fact the method of incorporation of the Heelstone was extremely simple but extremely clever.

To begin with there was a viewing point – the ground level floor of the Central Area of Stonehenge, Main axis, -, and a sightline toward the backdrop of Durrington Down the Cursus, and the hill-top horizon. On to this 'picture' was 'painted', or manipulated, the Heelstone in such a way that its vertical relationship with the backdrop was selected by choosing this viewing position from other potential viewpoints. (Visually the Heelstone could be 'raised' or 'lowered' to affect how the sun was actually seen as it rose on summer solstice day by lowering or raising the viewpoint. Always the Heelstone is securely fixed to its vertical azimuth range – centre line c. 50° 43′.)

Because of the need to vary the Heelstone / horizon relationship there was never indicated a fixed viewing height. If it had been needed it could have been done by such means as one or two horizontal slabs / lintels with a sightline across the circles. Such a structure would have needed to be very substantial – big, heavy – to survive the inevitable onslaught of time and humans. There has never been any evidence of any such arrangement whatsoever, anywhere within the monument. The only horizontal slab that was, in my opinion, intended to be as it now is, is the Altar Stone. Earlier in this script I discussed how I believe that the Altar Stone is intentionally positioned for other reasons. One reason for its position is to 'fix' and emphasise correct ground level which is part of this current part of the discussion. But this one stone is not sufficient to produce a sightline, only to determine and emphasise this level. Ground level itself is the datum point for this current Heelstone view.

As this is Stonehenge I would expect absolute accuracy in the way that any aspect of the design was planned and built. That is so with this second horizon scenario. As shown, the datum point for this Heelstone view is ground level within the central area (main axis – circle centre). This level is permanently fixed, easily assessed, and unlikely to be demolished, defaced, destroyed by later human interference. The ground level can be projected across valley towards Durrington Down. Dead level point along the azimuth line 50° 43′ is on the grass pasture just below the lower boundary fence of the Cursus. This point is altitude 00° 00′. It is highly likely that it was marked in ancient times by some feature such as a prostrate or standing stone. Perhaps with a ditched circle, such as the Heelstone still is. Here's one for archaeologists to explore in the near future.

The Heelstone can now be set against this backdrop and this horizon position. The rising sun and its orbit track are clearly shown on the face of the Heelstone by the large 'Heelmark' (shown on A2) that gives the stone its name. Now the sun centre orbit track can be extended to the left hand, downwards and backwards such that it intersects the horizon line at altitude 00° 00′, just by the left hand edge of the Heelstone. This should occur at azimuth 49° 38′ for S.S.S.R. BC2340. This confirms that the Heelstone is correctly set in its Durrington Down backdrop.

The actual Durrington Down skyline – 'Stonehenge horizon' – is a continual problem to define because of the mature woodland along the hill-top and the almost impossible access arrangements for the Stonehenge central area that English Heritage have imposed. Therefore I can only indicate a 'band' of

potential real horizon somewhere in the region of 00°35′ to 00°40′. The scenario still works in so far as the slight flexibility now needed does not potentially reduce the very clever result.

Now that the Heelstone is placed, based upon the actual track of the actual solstice sunrise, everything else quickly falls into place. The initial scenario is as illustration (C) – 'No Horizon'. The sun is in the Heelmark; Regulus is in the notch at top left hand quarter. The two H833... stars are within the 'chamber' at the bottom, or deep interior, of the Heelstone Slit. Their azimuth is exactly below the front edge of the sun.

As the sun travels upwards on its orbit track, Regulus and the two H833... stars travel also. At c. azimuth 51° 35′ the two stars 'break out' of their slit – their 'birth passage' – into the clear air beyond the Heelstone, and above the level horizon at 00° 00′. As they do so they are born on to the backdrop of the Cursus – although I have not yet ascribed significance to this earthwork– almost certainly it is also very important as such details usually are when Stonehenge is concerned. At the same moment Regulus, also, clears the edge of the Heelstone at top right hand.

It is the sun that marks the whole process. As the stars are born, the sun has passed first flash and is almost exactly at half orb,. (It is worth remembering, at this point, that a rising or setting sun is a very bright circular object but does not have a clear, sharp, well-defined edge or boundary. It is a fireball with all of the visual uncertainty of precise edge detail that one would expect with any focus of great heat and light. It is probably pointless to argue whether the half-orb or full-orb is here or there precisely to the arc-minute. Although computer programmes and calculation can provide a sharp edge, in real life, and to a naked-eye observer there has to be some latitude as to exactly how the sun is positioned relative to a fixed point or how large it is.)

As the sun progresses and the whole orb comes clear of the Heelstone, it rises further and, for just an instant, stands, full orb, above the 'nook' where stone and soil meet, back edge touching the edge of the Heelstone. And then the instant is past, sun and all three stars are on their way upwards into the new day. A star is born! (Actually three – but only one is our target.)

The whole situation has been timed and marked by the rising sun on just this one Summer Solstice Sun Rise day of this one year of BC2340. It happened only once and probably will never happen again – ever - unique and for some very important reason needing to be marked and celebrated by the construction that became Stonehenge.

One other very clever aspect of this scenario is that the Heelstone has been 'set up', within its landscape and backdrop, to give a fully functional VERTICAL edge, VERTICAL horizon against which the risings can be shown. To show these celestial objects all together on a horizontal (flat) edge would have spread them over a larger azimuth range than would fit into the general design, but this vertical display is compact, 'tight', unifies the essential objects, and fixes them to azimuth that can be clearly demonstrated and emphasised in the design, rather than fixing them to altitude and horizon that are so

difficult to fix, describe, identify with precision. How's that for clever – Huh? Hence my earlier description of a Heelstone that needed to be 'moveable' within the backdrop for a more versatile process of passing on the information implicit within the design.

Somehow, within the flat and windswept arena of Salisbury Plain, a vertical picture has been created. With just one ancient and ostensibly battered rock, information has been passed far into the future and to a present-day race of people who would be hard-pressed to equal this achievement. We must salute the builders.

SOME STAR and SUN DATA Summer Solstice Sun Rise BC 2340

Sun on Horizon -- Altitude 00° 00 03h 48m 04s AM

	Altitude	Azimuth
Regulus	00° 46.80′	49° 21.85′
Sun – centre	00° 00.01′	49° 37.93′
Front	00° 00.01′	49° 53.70′
Top	00° 15.95′	49° 37.93′
H833.1185	– 00° 50.73′	49° 53.15′
H833.1062	– 00° 53.31′	49° 53.31′
31 Leo	– 01° 07.70′	49° 51.94′

Sun on Durrington Down Horizon -- Altitude 00° 35′ 03h 52m 55s AM

Regulus	01° 21.74′	50° 18'13′
Sun – centre	00° 35.00′	50° 34.45′
Front	00° 35.00′	50° 50.36′
Top	00° 51.08′	50° 34.45′
H833.1185	– 00° 15.51′	50° 50.27′
H833.1062	– 00° 16.05′	50° 50.43′
31 Leo	– 00° 32.50′	50° 49.20′

SUMMARY.

From the previous 20 or so pages of this more detailed work, so far, concerning the information gained from the face of the Heelstone, some useful conclusions can be drawn:-

1). The Regulus Group and sun, as described, fits the features of the Heelstone extremely well in scale, proportion, and as a direct picture of an event at the particular date of S.S.S.R. BC 2340. To identify this picture the Heelstone has been seen within the wider landscape, exactly as it now stands and has always stood since first erected. This is a perfectly simple fact – the Heelstone is where it is and as it is. No argument or conditions needed. The features it contains on its face also are where they are. There is almost certain to be argument as to whether or not they were intended to be interpreted in this way – dismissal even. So far as I can see the whole forms a unified picture that is unique in the ancient world.

2). From out of this picture has come confirmation, by the simple but very long 'Gun-sight' axis, of the fact that there is another primary focus of Stonehenge, rather than marking S.S.S.R. This very important primary focus is shown within the event, at the correct date, on the face of the Heelstone. The next section of this script will deal, in great detail, with the facts of the Gun-sight axis and the integration into the Stonehenge plan of that part of the axis that is the reverse axis towards the south west landscape.

3). I have offered a strong reason why so many people feel that the marking of S.S.S.R. and its axis is the primary objective of Stonehenge but yet this event never quite fits correctly into the actual picture. It is because S.S.S.R. is what is actually seen, and what so many want to see in this place and context. The old, old criticisms and contra-argument by the anti-astronomy group against an astronomical link for Stonehenge achieves very little, if anything. Better that they could turn their thought and argument towards other possible areas that would actually move the Stonehenge story forward. Let interested people continue to follow the mid-summer sunrise at Stonehenge because they are correct that it was and is part of the story – just not all of it.

4). The most fundamental result of this section of my story is to show that there is a far more important objective for the erection of Stonehenge. It is to identify – pin-point – the very distant and apparently very obscure pair of stars, H833.1062 and H833.1185. I know nothing whatsoever of these two. I know not how distant they are from us, or how close they are to each other. They possibly appear close merely by their sightlines to us, and they could actually be displaced along the sightlines by a great distance. Their great importance is demonstrated by the fact that they have become the primary focus of Stonehenge, the reason for its creation. This must be a very important reason. Probably argument will be short, sharp and pointed – impossible, complete rubbish – no way that primitive people could even be aware of such knowledge let alone create Stonehenge to exploit it. How very, very often has human kind taken this position. How very often has 'intelligent' hominid preferred to demonstrate his superior knowledge and judgement only to be shown to be completely wrong soon after. How many

more Galileos and Darwins, etc. does the human race need. All we need is for the scientific community, with its enormous technical resources and budgets to focus in on these two distant stars.

5). In demonstrating that describing this celestial event of the rising of these two stars within the Regulus Group / sun at BC 2340 was the primary objective of the creation of Stonehenge, I have shown that the main focus of the monument, along the Gunsight axis, is the right hand edge of the Heelstone, and that this is a representation of a vertical horizon. A vertical horizon to demonstrate the celestial events of the selected date rather than trying to fit the event on to a horizontal horizon. A horizontal horizon could have failed for various reasons that I have described, such as that the Regulus Group would have needed more than 5° of horizontal horizon across which to rise. The same event needed about 2¼° of vertical horizon. It could be difficult to establish a permanent and clear horizontal horizon that could confidently be recreated in the future. Also it could be difficult to avoid uncertainty about the intended altitude of a horizontal horizon at a future date. There are probably further reasons why a vertical horizon is better than horizontal.

At the same time I have demonstrated where the main axis is and why. I have shown that the S.S.S.R. / Avenue axis was and is a secondary feature – useful to keep the context of Stonehenge alive and functional to the world at large over the millennia. In the next few pages I will complete this explanation.

6). A reasonable degree of astronomical precision has been needed to get to the current point. It will be argued that there is no possibility that primitive man could have used such means and achieved such results. So therefore the whole thing is not possible. It seems to me that such an argument is rather the wrong way round. The point is to demonstrate the result and then try to explain the reasons and the method, rather than to try to prove intellect and then, afterwards, look for possible achievement. It would be hopeless to try to prove the depth of knowledge and intellectual ability present in an ancient population, and then base upon this their construction of intellectual achievement. This would be the wrong way round. The value is in the actual achievement, not in a possible result. The fact is that Stonehenge is there, and, merely by its presence this has led many people for many years to try to explain how it was done. The ability and achievement are already there – now find the means and the method.

The Principle Axes - The Sunrise Axis and the Stellar Axis.

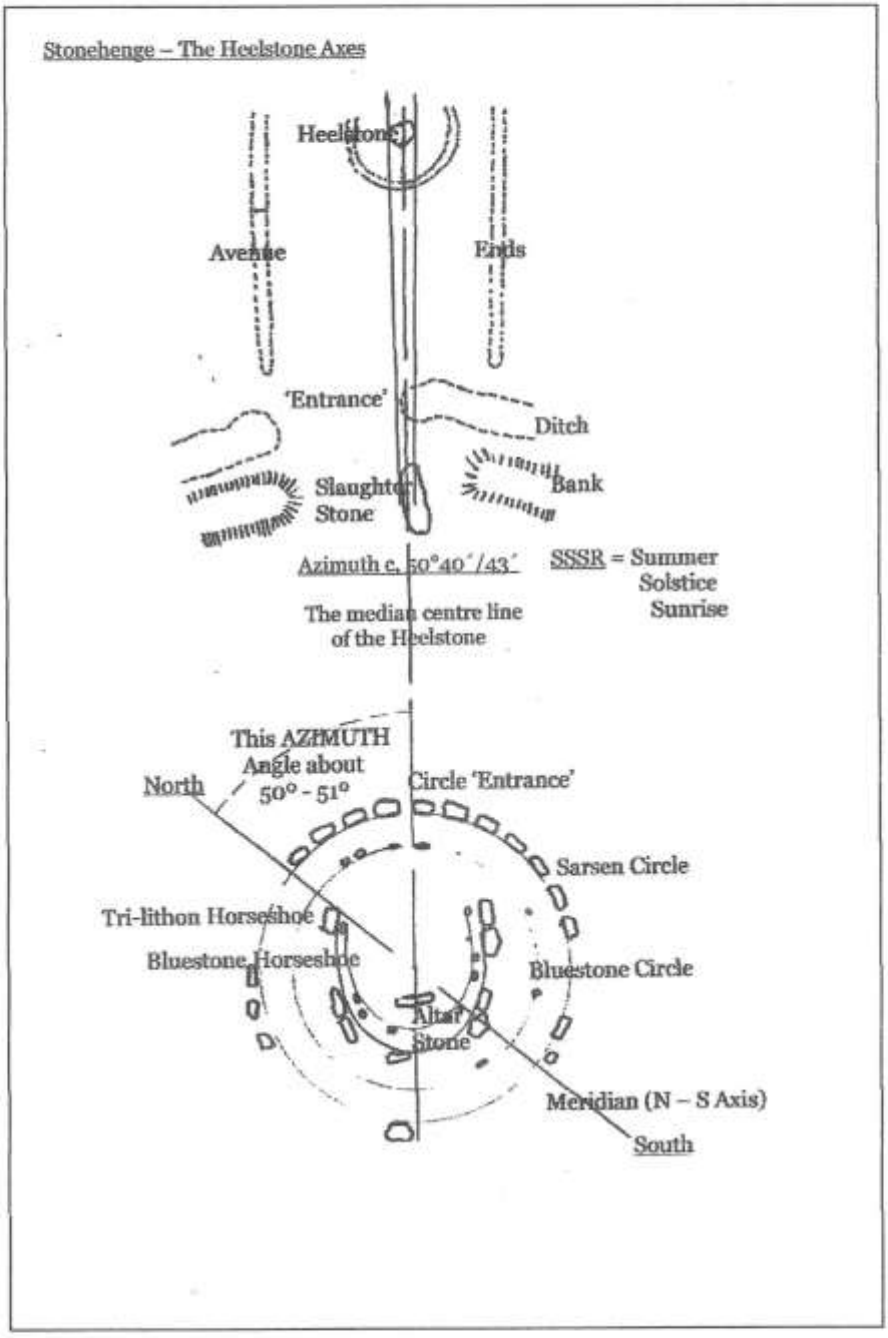
Within the context of Stonehenge, its astronomy, and the general form of its design, layout, and construction, any principle axis would be expected to arise from, or pass through, the centre point insofar as the centre can be found within the ruinous condition. I am aware that even in our present time people argue about 'where is the centre', 'which centre'? Some surveys show centres for different construction phases. These arguments are not particularly helpful in the context of where the present axes run. It seems to me that the actuality is what can be seen on the ground.

Plans on paper often tend towards 'perfect'. The reality, when seen on site, does not always match paper plans. Plans cannot show the subtleties of the shape of stones, nor definitely correctly describe the position of fallen and missing stones. Plans cannot take into account the backdrop of landscape or horizon. Plans cannot easily show lines of sight – alignments. Plans can easily lead to conclusions about such matters that do not work when actually checked on site. Similarly attempts at resurrecting – reconstructing theoretically – where stones may have stood on the completed Stonehenge are very tricky, uncertain, immediate material for criticism that is so often purely destructive.

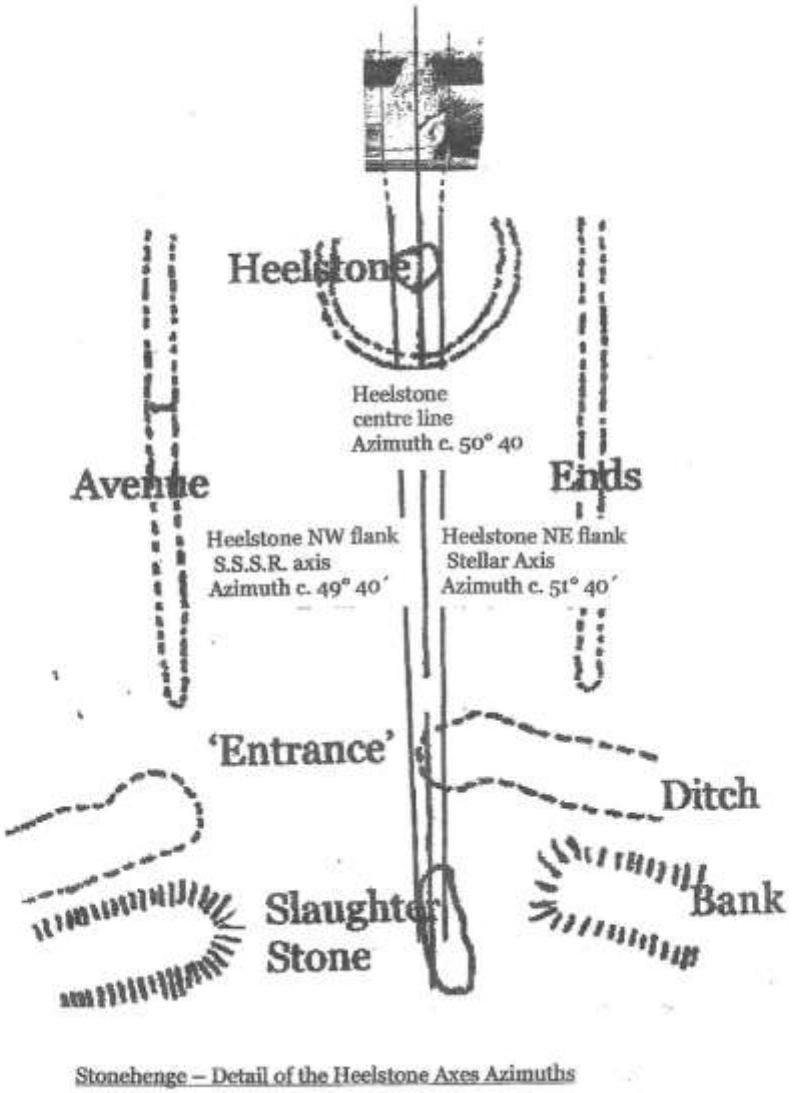
Stonehenge is circular, the astronomy that apparently revolves around it in the heavens follows a circular 'life'. The horizon is circular to Stonehenge. Time passes along the horizon in a circular manner. Commonsense suggests that any axes in such a multitude of circularity will pass through, or as close as practical to the centre. Then the centre has united all of these circularities into one description. Therefore we can expect that the principle axes of Stonehenge will pass through or from its centre. In these axes the centre is taken as being at ground level – at or close to the level set by the top surface of the Altar Stone. (Intentionally buried in its present position in antiquity – not the result of being 'squashed' into the ground by the fallen Great Tri-lithon upright no. 55.)

The following two plans show the two axes with which I am here concerned, and the monument centre line on to the centre of the Heelstone.

The 'Sunrise' axis passes very close to the left-hand or north west edge of the Heelstone, low down at its widest point. The 'Stellar' axis passes very close to the north east or right-hand edge, again low down at the widest point. In this way it will be seen that the full width of the Heelstone, as seen from the centre, exactly matches the width between the two principle axes of the monument. Both of these axes are concerned with risings of celestial objects above the horizon as has been described in great detail in earlier pages.



Full plan showing the centre line on to the Heelstone and the two axes, one each side, all passing through the monument centre and the archway of the Great Tri-lithon. Working azimuth values have been taken as;-
Sunrise axis 49° 40´, Centre line 50° 40´, Stellar Axis 51° 40´.

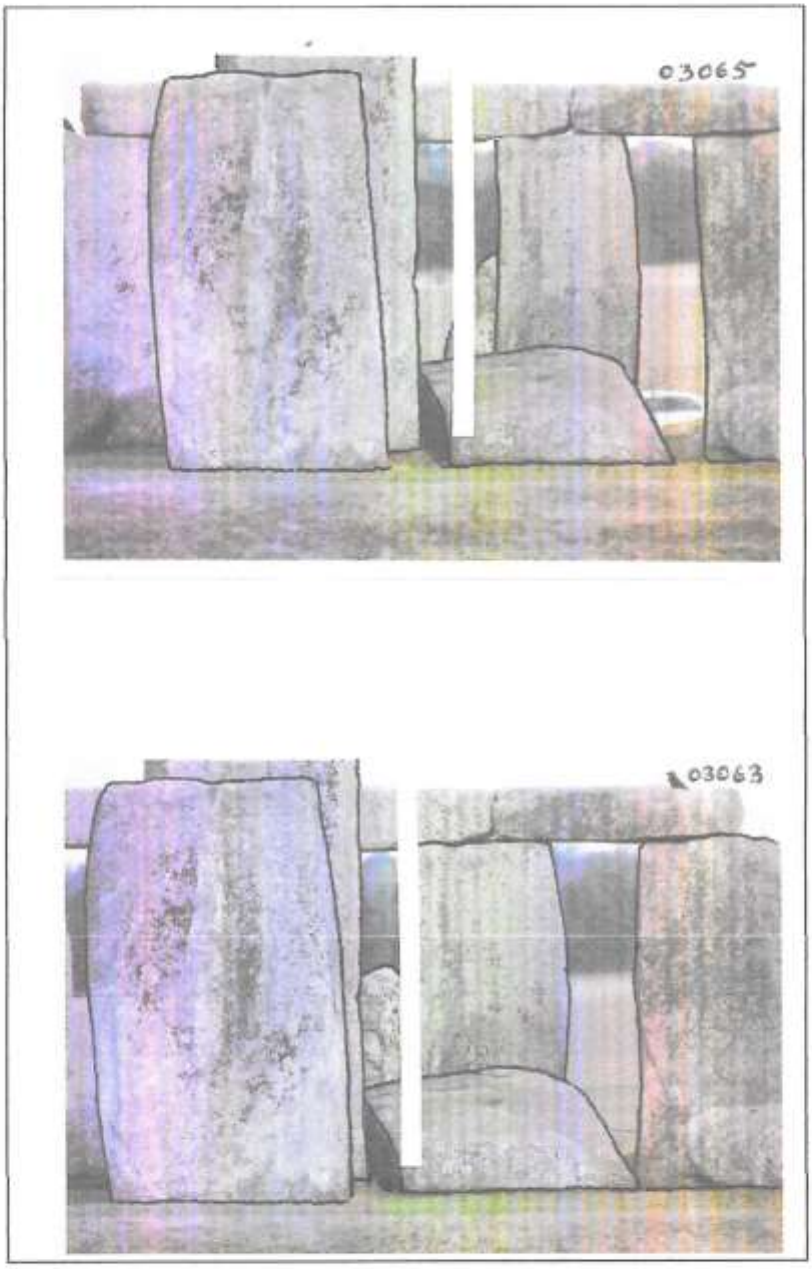


Stonehenge – Detail of the Heelstone Axes Azimuths

The axes in greater detail. It can be seen that the centre line reaches the Heelstone very close to the bottom of the Heelstone Slit. On previous, larger pictures it is also clear that it just clips the leading edge of the 'Heelmark' in the face of the stone above. Thus the two points align vertically.

The stellar axis crosses the Slaughter Stone fairly centrally. It is of interest to note that, on the top centre of the Slaughter Stone is just a one, single, very deep, small but very regularly circular and smooth 'cupmark' that, in its form, matches very much the similar cupmark labelled 'Dotty' high on the face of the Heelstone. This second cupmark appears to be exactly on the line of the Stellar axis.

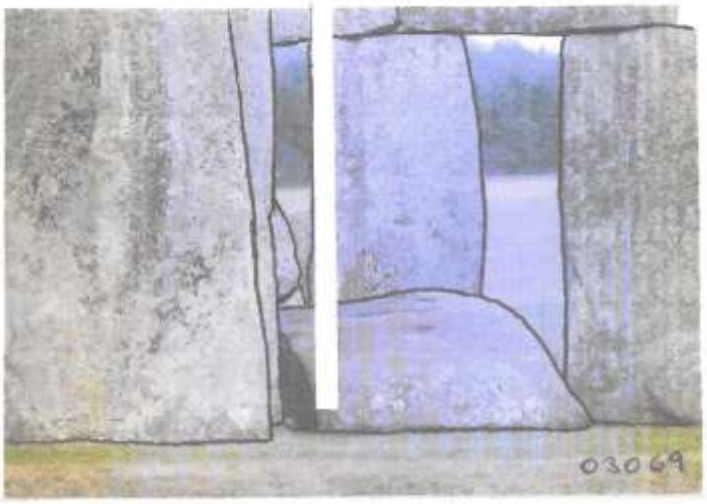
(I note that the azimuth values that I quote, throughout the text, for the various alignments, can vary very slightly here and there - normally by just a very few arc minutes from one place to another. This is because in places I am trying to describe with some precision, whilst in other places I try to give a slightly more generalised picture with numbers that are easier on the eye and to remember from one page to another. Generally the effect of a variation by one or two arc minutes does not affect the main story. Specifically there are plenty of places where great precision is possible and emphasises the whole concept of exceeding accuracy within Stonehenge. Apologies.)



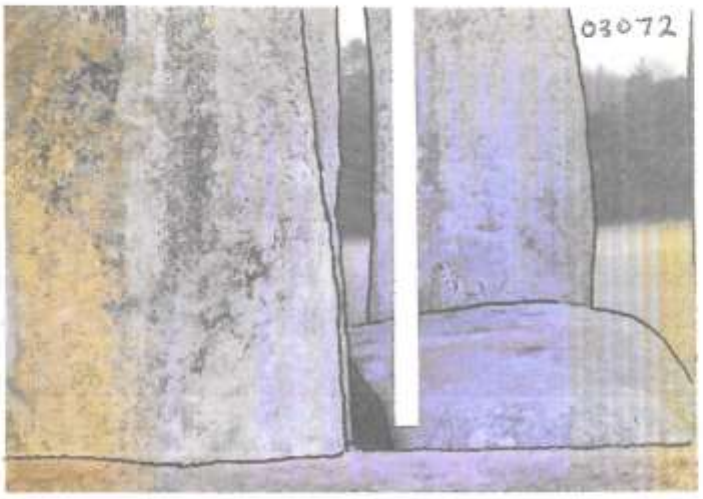
(F)

(G)

(H)

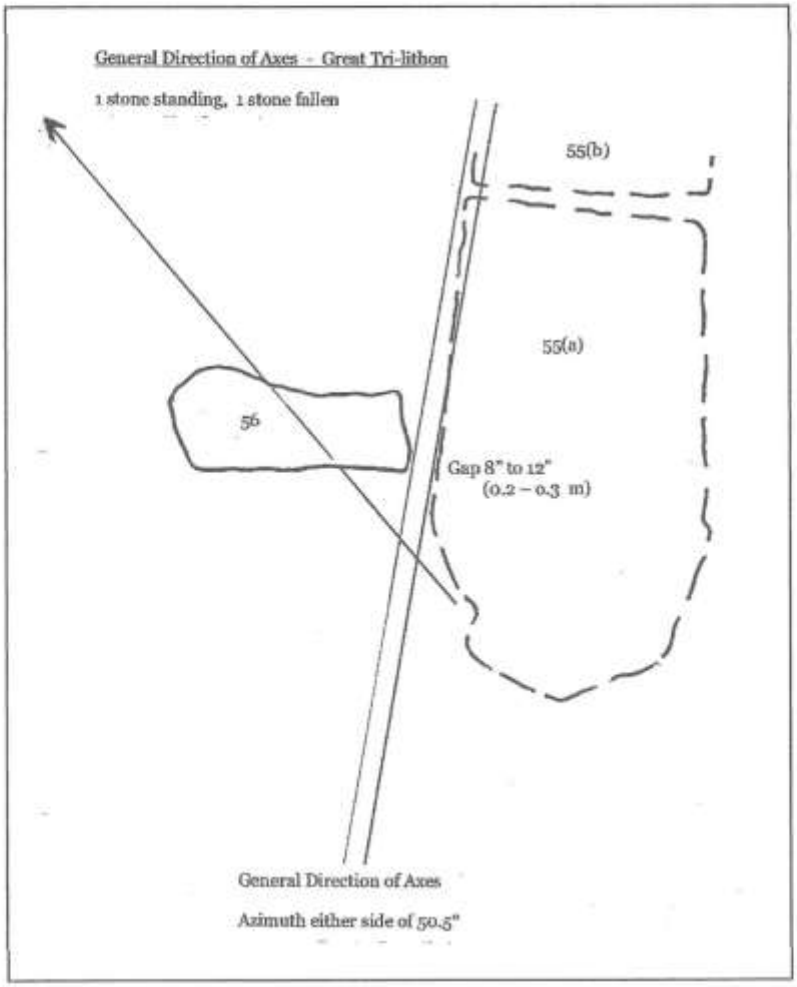


(J)



The picture sequence above, from (F) through to (J), shows the sightlines of the main axes through the monument from outside of 'rear', at south west, towards north east and Heelstone. The lines enter Stonehenge crossing the line of the outer Sarsen Circle and then through the central archway of the Great Tri-lithon (Upright no. 55 now fallen and broken mid-way). (Stone no. 16 of the Sarsen Circle is to the left of the axes.) They then proceed out through the Sarsen Circle 'entrance', passing close to Stone no. 1 on the right.

Finally they reach and'clip' the edges of the Heelstone, visible against the backdrop of pasture, Cursus and Durrington Down woodland. The solid white vertical line is a postulated edge for Tri-lithon upright no. 55 before it fell to try to give an idea of the narrowness of the slit through the archway. The enlarged illustration below of the gap through shows a width of c. 8 – 12 " (0,2 – 0,3 m). Clearly the gap was never designed for a 'processional' purpose and for people to pass through during ceremonies. The only other intended purpose could have been for a sightline or light beam to pass through.



Debate about whether or not there were other standing stones on the axes lines that would have blocked the sightlines seems pointless. Why would so much effort and care have been expended to create such astonishingly accurate sightlines to such important celestial events only to put some visual obstruction in the way and block them? We must take a gamble on the obvious to move forward.

The first axis in picture (F) clips the left hand (north west) edge of the Heelstone. In the far distance at the edge of the Cursus stands a lone thorn

bush that gives a mark to the edge of the Avenue. As I have shown just previously, the north west edge of the Heelstone is about exactly on the azimuth of true S.S.S.R. for BC 2340 at 49° 38′ - level horizon. By the very slightest of movements to the left hand in this picture (F) the edge of the Heelstone y occupies the centre of the Tri-lithon slit and the alignment (sightline) is now down the Avenue.

Therefore this is the solar – sunrise – axis and marks true position of S.S.S.R.

Visually the eye is at the point of the camera in this view whilst the true level horizon from Stonehenge is at a point in the distant pasture field slightly below the boundary fence of the Cursus and the dartk belt of woodland. This is the point of sun centre at rising. But because we are a long way back from the centre, and higher, the Heelstone appears greatly reduced in size and lower. Now the 'picture' of the sun rising across the face of the Heelstone is distant and hardly even relevant. But if the viewpoint is now moved forward to the centre and lowered to ground level, as illustration (E), then the apparently larger Heelstone and its top edge are raised against the distant backdrop until the top protrudes well above the skyline.

At this point the rising solstice sun will cross the true horizon and rise across the face of the Heelstone, fitting neatly into the Heelmark as it travels, and then rising clear of the Heelstone more or less as it rises clear of the top of Durrington Down. Therefore the Solar axis has done its job and placed the observer and the information concerning the sunrise in the correct place.

There is no obvious viewing point for the Solar sunrise axis on the rear outside of the monument. The eye can see the axis leading away past the Heelstone N.W. edge. That is sufficient as it gives us the azimuth for the event that accurately fits the date of BC 2340. (Or by its azimuth it greatly narrows the choice of date – event – for us in our initial search for dating information. One way or the other one fact is confirmed by the other.) It does not matter that the visual size – height – of the Heelstone is so much reduced. Only the azimuth for the edge is required to establish the axis.

This solar axis also takes a line just about down the centre of the Avenue. This fact also suggests that the emerging picture that is being built is on the correct track. It also confirms justification for the construction of the Avenue.

The solar axis can be extended from Stonehenge centre in the opposite direction towards south west. It has long been known that the unique feature of this scenario is that because of the choice of latitude at which Stonehenge was sited, the set of sun at mid-winter solstice was exctly diametrically opposite to the rise of sun at mid-summer solstice, during the epoch when Stonehenge was completed and would have been in use. Some example values for S.S.S.R. and W.S..S.S. are given below. The diametrical opposite of S.S.S.R. azimuth is 180° further round, so therefore adding 180°to the S.S.S.R. azimuth value should equal the M.W.S.S. value.

		Altitude	Azimuth
S.S.S.R.	BC 2343	00° 0.03′	49° 37.84′
	2340	00° 0.01′	49° 37.94′
	2337	00° 0,03′	49° 37.84′
W.S.S.S.	BC 2343	00° 0.05′	229° 37.57′
	2340	00° 0,05′	229° 37.4′
	2337	00° 0.01′	229° 37.8′

The result is demonstrated to be very precise. The two events of solstice rising and setting are very exactly opposite. This is a fact, whether intended or a lucky chance. This situation existed for some decades but only at the latitude of Stonehenge. Just a few miles north or south and the S.S.S.R. and W.S.S.S. axis would not have been straight. It would have needed a kink as it passed through Stonehenge. Now the solar axis can be represented as a straight and unbroken line from horizon to horizon, passing through the centre of the monument, through the Tri-lithon archway, through the two sides of the Sarsen circle, and grazing the N.W. edge of the Heelstone.

There is no known marking-stone, hump, hill, post or archaeological evidence for a site on the S.W. horizon to mark the winter solstice sunset. There may be remains of something. There is no record of anybody ever looking, certainly in modern times. It could be a worthwhile idea.

Following through the pictures from (F) through (G) and (H) to (J), as the viewing position is moved steadily to the left, towards the edge of Sarsen Circle upright no. 16, we can see how the relative view of the Heelstone and the distant horizon moves steadily towards north east (azimuth value increases).

In (G) the Heelstone top tip is visible and, on the face of the Heelstone, we can see the Heelmark that corresponds to the sun rise orbit track as it crosses the face. (Directly below the 'leading edge' of the Heelmark is the 'chamber' at bottom, or start, of the Heelstone 'Slit'). Also just visible near the top of the Heelstone is 'Dotty', the deep, (man-made?) very regular circular cup-mark that appears to match various celestial features that occur in different aspects of the view of the pictures on the Heelstone face. Notice how the two uprights – Sarsen Circle no. 16, and Tri-lithon no.56 – have their edges moving towards alignment. Both edged are very clean and regular. Possibly worked to take out natural roughness.

Picture (H) has moved on until the two vertical edges are close to complete alignment. Now the Heelstone view has moved further and the Tri-lithon slit takes in the top right hand (north east) edge of the of the Heelstone that is the vertical horizon from which the celestial objects – sun, Regulus, and the two H833... stars are depicted as rising at S.S.S.R. BC 2340. The top section of the Heelstone Slit is clearly visible.

Finally picture (J) has reached the point where the two vertical upright Sarsen edges are almost as one. The Heelstone has almost completely gone. But the

final part of the edge is still present (but here obscured by the fallen bulk of Tri-lithon upright no. 55 which, as it lays, rises by 3ft. 6ins. (1.1 metres) above ground level). The part of the Heelstone that should still be within the view through the Tri-lithon arch if no. 55 was still upright and in its correct position is the lower north east edge and, most importantly, the Heelstone Slit exit – 'mouth'. This arrangement is as it was when originally constructed and is the whole point of Stonehenge. What is left still within the archway view of the Slit exit is that part of the Heelstone Slit from where the two H833... stars emerged as I have described previously within the explanation to illustration (E). This tiny view is the heart of Stonehenge. This is the part that really mattered to the designer. This is the information – story – that was to be read. But only for the S.S.S.R. of BC 2340 when the Regulus group and the sun were in their rare juxtaposition.

The longer view of the Stellar axis from this viewpoint and going forward has the two sarsen upright edges almost exactly aligned and, on the far side of the Sarsen Circle, Entrance upright no.1 edge is very close to closing the view through. But this Entrance edge coming downwards has a long tapering curve towards the Heelstone and the nearer edges. If it was not for the fallen no. 55 blocking the view, I can surmise that no.1 tapered edge would meet no. 55 and 16 edges close to ground level and in such a way as to close up entirely just below the Slit exit. Thus the V-shaped notch sightline has been formed, hopefully to 'hold' the Slit entrance above ground level. If this was the intended view formed by this alignment then it has to be the whole point of the construction. And the right hand or north east edge of the Heelstone is the main part on which to focus.

Both of these axes that have been described can be viewed in reverse from the Cursus and through Stonehenge, back towards the south west horizon - 'The Long View Reversed'. Illustration (K), is the reversed Solar (sunrise) axis. It is defined from a position on the Cursus that exactly aligns the north west edge of the distant Heelstone with the inner, south east edge of the Great Tri-lithon upright no. 56. (Easily identified as the tallest standing stone and with the large 'lump' of the tenon on the top.) Satisfyingly this view is almost exactly central to the Avenue, whose defining side ditches can be seen leading across the grass field. So long has there been debate about how and whether or not the Avenue is an integral part of the solstice sunrise event at Stonehenge. Just focus on the edge of the Heelstone rather than the middle – as our Stonehenge man would have done. Then everything is perfectly clear. Looking in from the Cursus it appears so obvious.

There is no obvious visual mark beyond Stonehenge, in the south west landscape to mark this alignment. The view is of the grass field across the A303 and grass pasture as far as the small wood named 'Normanton Gorse'. Then the view disappears into this woodland and any potential archaeological remains are currently lost. I would have thought, in view of the landscape and features surrounding Stonehenge that there is a very good chance that there is a site waiting to be discovered. This may be wrong but if ever proven correct would be just one more fact to confirm this story so far.

The Two Axes From The Cursus. Some of the best views of Stonehenge are from the Cursus, views that rarely, if ever, seem to be published.

(K) View along the Solar Axis, along the Avenue, and past the Heelstone north west edge.

(L) View along the Stellar Axis, past the Heelstone north east edge, past the edges of other standing stones, and to top centre of barrow Amesbury G 15.

The view along the Stellar Axis, (L), is very satisfying. There is no Avenue type feature from the Cursus but, moving to a position on the Cursus that exactly aligns the other, north east edge of the Heelstone and the Tri-lithon upright, it can be seen how the distant, very large barrow, Amesbury G 15 fits just about perfectly into the backdrop of the monument.

By adjusting the viewing position from the Cursus carefully, the mound G 15 can be brought to a position where it visually exactly 'captures' and enhances the top lintels of the side Tri-lithons of the Tri-lithon horseshoe. From eye-

level G `15 and Tri-lithons are a perfect fit (apart from the slight hollowing on the east side of G 15 that is possibly the result of nineteenth century barrow digging). It is easy to see that the top lintels of the Great Tri-lithon would have aligned and fitted exactly to the top centre og G 15.

This match of monument and mound would presumably be because this Stellar Alignment has priority over the Solar alignment along the Avenue. The barrow is very large. It must have taken great effort to build. It seems very unlikely that the designers / builders of Stonehenge would have allowed this to be built on this alignment excepting that it was to be a part of the scenario. The barrow has never been dated. Apparently there were / are the remains of wooden posts and wooden objects within. These may well be dateable material. Again one for future archaeologists? (So many potential sites, so much potential material waiting around the landscape!) Considering the totality of this particular aspect with monument and mound, it seems as though the creators of Stonehenge also had an eye for aesthetic satisfaction. There was clearly a desire for the visual result of the finished project to look good.

Illustration (M) – From Heelston north east edge to Tri-lithon upright.

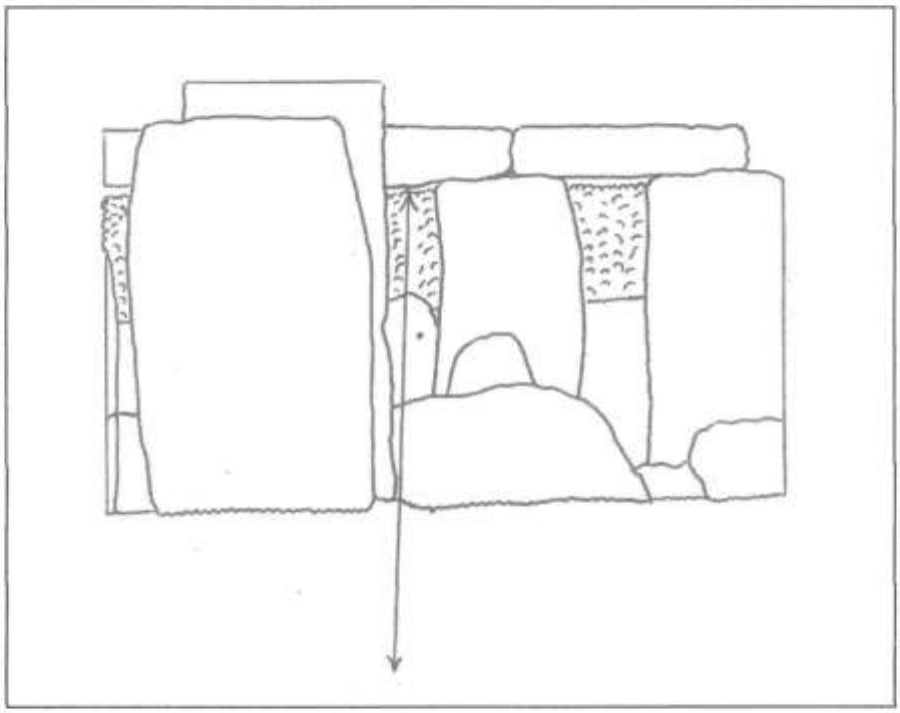
Illustration (M) from the north side of the Heelstone past north east edge, along the Stellar axis, and with the distant edge of Tri-lithon upright no. 56 just visible (see the top hump) forming the visual slit with the Sarsen Circle Entrance upright no. 1. The Heelstone Slit exit is indicated by the white arrow. The Slit exit is taken to be the focal point of this Stellar axis. (Apologies for the chain link fence obstructing this very important view –

needs must!) Early in the day on a frosty and misty winter morning the site is almost deserted and very atmospheric.

The extraordinarily satisfying view along this Stellar Axis, from Cursus, through Stonehenge, to barrow G 15 is only matched by the view in the other direction back from G 15, through Stonehenge to Cursus and Durrington Down.

These long views give some idea of the perspective and great length of vision that the designers and builders were also thinking of and imagining as they first scouted the land and began to form plans for the finished monument. How easily we can look with their eyes and see that which they sought to see. How lucky we are to see the final result without having the labour ahead of us to create it.

Stellar Axis seen from standing atop Barrow Amesbury G 15 – The 'Long View'
(The crowds of people bear testimoney to the success of English Heritage at harvesting cash off of the labours and the backs of our ancestors who struggled to build Stonehenge for our future for free.)

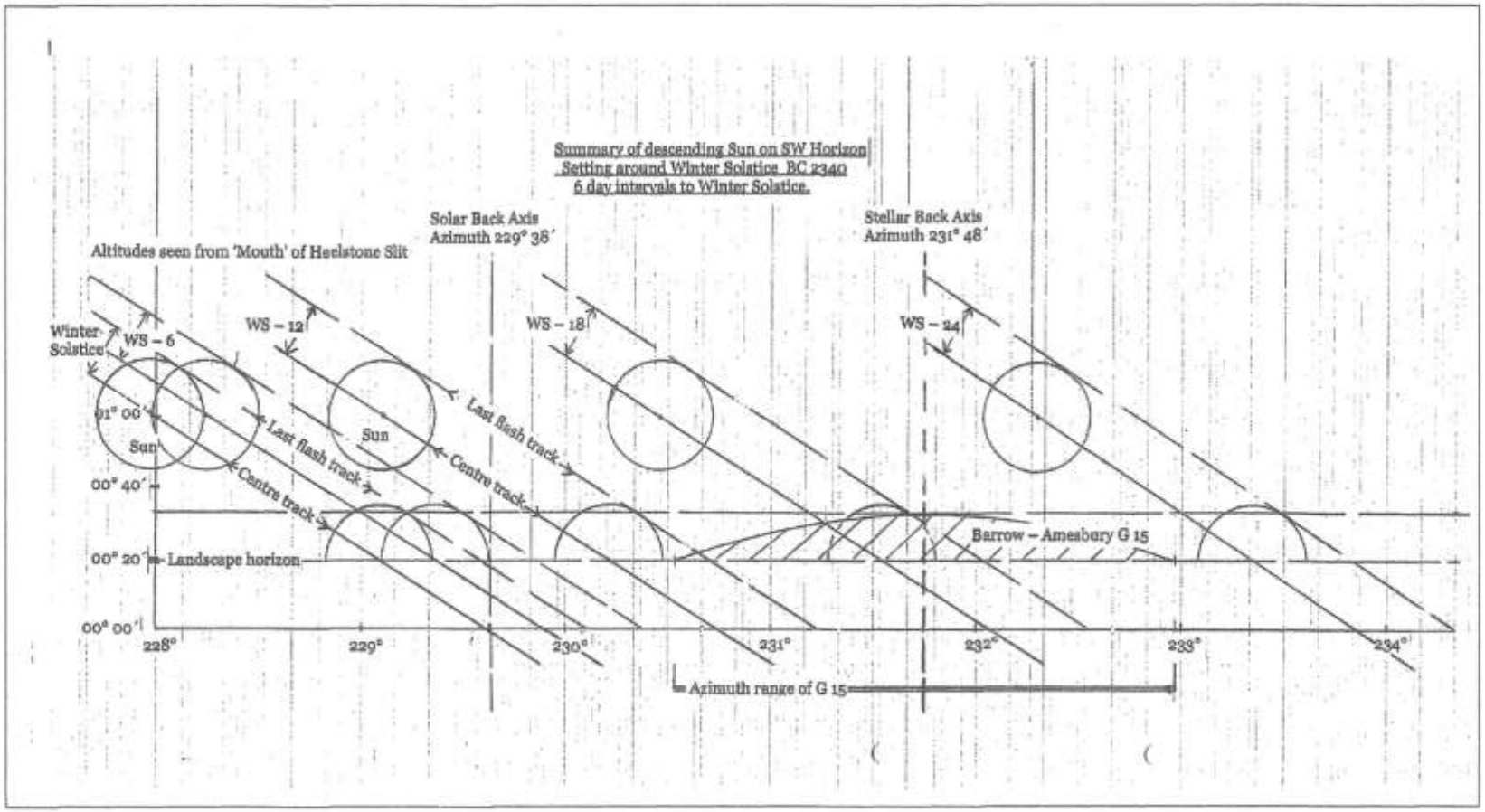


It remains now to deal with the south west horizon from Stonehenge itself, and with the setting of the sun in the region of the Back Axes around winter solstice sunset (W.S.S.S.).

Both of the axes, Solar and Stellar, can be extended backwards in this direction. Nowadays the effective horizon is the small woodland of Normanton Gorse that blocks any view into the further distance. We cannot say how this view would have been millennia ago. Presumably without the obstruction of trees there is a much longer view. What marks or monuments may have been created further along these axes is anybody's guess in our time. There has been little if any research here. Presumably, as the archaeological fraternity finds it so difficult to deal with astronomy and the possible connection of the two subjects in this context, and also because they dominate the research scene in most matters ancient, especially at Stonehenge, there is not much hope of any exciting discovery in the foreseeable future. Only if and when these two diverse subjects, archaeology and astronomy, can manage to come together, talk to reach other, and have some sort of serious debate about archaeoastronomy, is there likely to be any serious research concerning Stonehenge above the ground.

The summary graphic (see overleaf, illustration (Q) shows the pattern of setting sun, along with dates to (and from) the Winter Solstice for BC 2340. Altitude of the actual landscape horizon at c. 00° 20′ and for zero horizon are plotted against the sun azimuths fir centre and 'last flash' leading up to solstice. (The same day count applies after solstice as the sun 'turns around' and begins its progress back from mid-winter towards spring.)

Also shown is the large barrow, Amesbury G 15, that is such a prominent and significant feature of this aspect. I have shown an azimuth range for the barrow based upon its effective width across the width of Stonehenge. The precise points of its merging into flatter field are slightly debateable but do not particularly alter the total effect. The same can be said about the height of the barrow. The only printed figure is from the excavation report of Colt-Hoare in the nineteenth century when an 'elevation of 42 ft,' is described. Clearly this is not the height of the barrow as it would be twice as high as Tri-lithon upright no. 56 at Stonehenge! My graphic uses a height of 14 ft. Fortunately, and once again, uncertainty over the height (or effective vertical altitude) of G 15 does not particularly affect the result. As with the Heelstone aspects, it is the azimuth picture that matters most.


Summary of descending Sun on SW Horizon
Setting around Winter Solstice BC 2340
6 day intervals to Winter Solstice.
Solar Back Axis
Azimuth 229° 36′
Stellar Back Axis
Azimuth 231° 48′
Altitudes seen from 'Mouth' of Heelstone Slit
Winter Solstice
WS – 6
WS – 12
WS – 18
WS – 24
01° 00′
Sun
Sun
Last flash track
Last flash track
Centre track
Centre track
00° 40′
00° 20′
Landscape horizon
00° 00′
Barrow – Amesbury G 15
228°
229°
230°
231°
232°
233°
234°
Azimuth range of G 15

(0)

051

During late autumn and moving, daily, towards mid-winter, the sun descends behind Stonehenge in the south-west sky to set below the horizon earlier each day, and further eastwards. It steadily progresses along the horizon towards its final Midwinter Solstice Sun Set position. The M.W.S.S. position, as I have described earlier, is, uniquely at the latitude of Stonehenge, diametrically opposite to the Mid Summer Sun Rise position. M.W.S.S. azimuth value is exactly that of sunrise + 180°. I.e.; -

49° 38′	S.S.S.R.
+ 180° 00′	
229° 38′	M.W.S.S.

These values are those at zero horizon altitude. As has been seen, visually, the very slight real horizon altitude elevations in either direction have only a slight effect on azimuth and largely mitigate the effect of atmospheric refraction.

Final azimuth values for M.W.S.S. at actual horizon altitude value of 00° 19′ are ; - Sun - centre 229° 03′
Last flash 229° 20.5′
(Seen from Heelstone Slit exit / Stonehenge centre – ground level.)

It is clear from the graphic that this azimuth value for the setting sun misses that part of the horizon marked out by barrow G 15. In fact it misses the top centre by more than 2 ° of azimuth. This equates to something in the region of18 days or more from winter solstice. Clearly the designer would not have made such a large mistake in the position of G 15. Therefore there must have been other reason for it's location. As I have so often shown, from the top of G 15 one looks straight down the Stellar Axis and through Stonehenge. In the present scenario of there being the marker of G 15 for the Stellar Axis but no significant comparable mark for the Solar Axis, the inevitable conclusion has to be that the Stellar Axis has priority.

As so often now stated, once again the fact is emphasised that it is the Stellar Axis that dominates the design of Stonehenge. And the Stellar Axis leads to only one point within the design – the exit ('mouth') of the Heelstone Slit. Combine design and dating, as I have demonstrated earlier, of BC 2340 – summer solstice. All of these facts lead to only one point – the pair of distant, obscure stars the Regulus Group: - H833.1062
and H833.1185

The process of sun setting over this mid-winter period is worthy of investigation. As this 'season' of sunset develops, the declining sun, throughout late autumn, has been passing across the back of Stonehenge, and daily its light has formed a light shaft that passes between the various uprights on the south-west side of the monument. When the sun is high – mid to late autumn – the light shaft has shone between the uprights and fallen, at its forward edge, before the central area. As it daily progresses it falls on the ground through the great Tri-lithon archway, then across the Altar Stone, and then beyond. Day-by-day it has progressed towards the Sarsen Circle Entrance, its leading edge always defined by the Sarsen lintels of the various archways. Effectively the shadow line of the lintels has moved forwards.

Eventually the shadow line and leading edge have reached the Heelstone and begun to ascend the face.

During this late autumn phase (and for the summer generally), the whole scene from south-west to north-east has been fully illuminated by day as the sun is in its normal summer position, high in the sky. But as the sun declines it reaches a low point when it does not illuminate the Heelstone above the lintel shadow height.

At this time a 'season' begins when, daily, the light shaft, for a few minutes before sunset, enters the archway of the Great Tri-lithon, through to the Heel;stone, but the bulk of the Heelstone is within the shadow effect of the bulk of the monument uprights. This 'season' would have been the high point of the purpose and process of the grand design.

Daily a tall but very narrow light beam would sweep the Heelstone face, 'switching-on' sharply just before the left-hand edge and 'switching-off' just after the right-hand edge. At the same time the lower edge of the beam would effectively be formed as the hump of barrow G 15 produced a shadow effect whilst the sun was still crossing this part of the sky. I cannot actually demonstrate this in practise but it would have been my personal objective to cause the bottom of the light beam, at some point, to actually travel up the Heelstone Slit. The result would have been an actual, real-time, live, sun-powered, light show to actually and vividly bring the whole stone monument to life. And that is what it was all about!

And at this point remember the 'sun-dialling' effects, and the sun-symbol engraved backstones within the chambers of several of the Irish passage 'graves'!

Finally the day of winter solstice is very close and the sun set has progressed until it is now passing G 15. The light beam is still entering through the Great Tri-lithon archway but is no longer reaching the Heelstone Slit. This part is now in darkness from the stone upright shadow effect. For approximately 15 days on either side of the winter solstice the sun did not reach the Heelstone Slit. For some of these days it probably did not reach the Heelstone at all. The whole façade was unlit, cold, lifeless, until the sun turned around, retraced the process, and sun and life returned for the new year.

But during this process, after sunset, at the beginning of darkness, the night sky was rising around and above the Heelstone. And within the night sky, at this time, was the Regulus Group.

Because of the diametrically opposite effect of the same sky at two exactly opposite ends of the year, at the same time as the sun set at winter solstice at azimuth 229° 38′ in the south-west, the night sky that rose around azimuth 49° 38′ in the north-east contained that part of the Cosmos that was of such intense interest and was mapped out across the face of the Heelstone. It would have been at this time that the eye-testing hunt for the stars of the Regulus Group would begin. At this time of solstice the H833... pair of stars would have risen, completely invisible but to be celebrated.

Due to the cut off of star observation because of the Earth's atmosphere it would be very unlikely that any Cosmic objects would be seen at very low level. But now the Sarsen lintels came into use again as artificial horizons above which the night sky could be relatively easily seen and marked. There is no particularly obvious place from whence observing was carried out. It could have been any of several points within the stones once familiarity with the night sky at this time of winter solstice had been achieved. Cold frosty nights would be very good, the kind of night when one can feel as if is possible to 'reach out and touch the stars'. Even in our day and age in north-west Europe such nights are not rare. I doubt that there have been many investigations of the top surface of the lintels looking for obvious marking such as cup-marks or straight lines such as are found at the Irish Passage Graves on suggestively significant entrance stones. I recall some years ago that somebody pursuing an archaeoastronomical theme had some results of marks above the Sarsen Circle Entrance, but I cannot find any particular record of this now.

There is a wealth of potential views to be had from within the stones to all directions of the sky. To enter into this particular area of speculation as to how anybody might have memorized / marked particular sight-lines in order to observe a particular aspect of the Cosmos is to enter into a very tricky morass of speculation that is, at this distance in time, nearly impossible to prove. This is how so many arguments within the recent past, by so many enthusiastic investigators have come to grief once the detractors have got to work employing arguments based upon statistics, probability, etc. to demonstrate that anything can be proven given so many alignments and therefore nothing can be proven.

I will give just one example. There is a (theoretical) alignment from centre front of Great Tri-lithon archway towards E.N.E. at azimuth c. 75°, grazing the last, outer, northern, vertical edge of the end Tri-lithon, nos. 50 – 51, and out over the top inner edge of the Sarsen Circle lintel. (If the horseshoe shape of the Tri-lithon formation represents two arms reaching out to 'embrace' and 'gather' a certain segment of the sky, then this alignment would be the very easternmost boundary of that segment.) This alignment exactly grazes the edge of the Triolithon upright and then passes directly over northern edge of Sarsen Circle upright no. 4. (It looks just like an alignment ought to!) It is an easily memorable alignment.

The altitude of this alignment from the archway at ground level is c, altitude 12.7°. Interesting perhaps but of little practical use because it is calculated from off of ground level. However, if I walk forward towards the Sarsen Circle keeping very carefully to the alignment with the Sarsen uprights, then at a point just off of the end of the nearby Altar Stone the altitude has become c. 18.4° (still calculated off of ground level). If I continue to walk forward until I am at a point about 10.2 metres inside of the Sarsen Circle (depending upon the height of my eye-level – here at 1.5 m.), I am now at a point just within the line of the inner Bluestone Horseshoe. Now the altitude along the same alignment <u>from my eye-level</u> is c. 18.4°. For BC 2340, Altitude 18.4° and azimuth 75°will give me, over the top of the Sarsen Circle and in the 'nook' formed by the end Tri-lithon vertical edge, the Regulus Group and, in particular, the two small H833... stars. An alignment that is very easily

remembered by somebody on site and familiar with the night sky. But just about impossible to prove in our modern times. Far too many ifs, buts and maybes about it. Not defined within the remains of the Sarsens. Just one of many possible alignments. Hence the recovery, discussion, potential gain of information and knowledge about the reasons for Stonehenge are so easily bitten off at birth by detractors and ignorance. Investigation cannot proceed. Sadly the detractor brigade rarely seem to have any potential new lines of enquiry of their own to put forward.

There is an aspect of the potential astronomy of Stonehenge that has been much explored and written of in recent years. This is the question of whether Stonehenge was used to predict eclipses. Personally I see little use to this ability excepting that it has been claimed that a 'priestly class' could impress and possibly dominate the masses by predicting, ahead of the event that the sun / moon was to be 'banished' and then brought back by 'magic'. That is another issue and does not concern this text. However it might just have been possible, given a very full solar eclipse at the right time of day (sunrise or near), and the right time of year (Regulus Group rising?), to detect that part of the Cosmos of interest during daylight. It seems unnecessarily awkward to look for a star group at this time, especially as any eclipse can only last for a few minutes. I do not see much value in this line of investigation. Once again it seems to rest on too many fragile extrapolations.

It has also often been suggested that early civilizations, and particularly farmers, needed a calendar system to tell them when to plant or harvest crops, or what time of the year it was! And Stonehenge could have been the 'master' calendar – 'Big Ben' – for the prehistoric 'nation'. Again this is unlikely. Anybody at all who lives close to nature (amongst it!) all of their lives has only to put their head out of the door and look around to know exactly what time and season is outside. They certainly do not need clocks and calendars.

There are many and varied suggestions put forward for the creation of Stonehenge. I will not discuss any more here, save one very recent one. This is that the monument was built to celebrate – Death! More specifically to mourn, contact, think of, even revere dead ancestors, predecessors, whatever. Soon to be expanded to a 'cult of the dead' that presumably dominated the thoughts, lives and actions of the population at large. I think this idea is not worthy of any credence. The people of that time would have loved life, laughter, love, good family, friends and neighbours, exciting events, travel, adventure, just as we do now. An obsession with death? Huh!

Some Later Thoughts Concerning The Central Bluestone Formation.

-The' two-joined-together-to-make-one' effect of Bluestones 66 and 68 was not used in the final Horseshoe formation of Stonehenge 3 (c).
-Presumably it was therefore intended as part of the Bluestone Oval formation of 3 (b).

If we are dealing with Binary expressions then I have described an 18 vertical, single pillar horseshoe as the final result for 3 (c), and described and used the resulting binary. I.e. I I I I I..... x 18.

From the archaeological evidence and from the condition and description of some of the Bluestones within the Stonehenge remains, it looks more than likely that the Bluestones of 3 (b) and earlier were arranged somewhat differently as an oval with the possibility of one or more trilithons. Also with at least one 'joined' pair where two stones were set with the tongue-and-groove effect to stand. 'united', as one stone. Why would this tongue-and – groove effect have been planned?

There are a number of possible reasons:-
1). The inner Bluestone formation needed to contain a specific number of upright pillars combined with a very few trilithons to give a desired binary expression. But the number total did not permit of the desired actual physical numerical arrangement of pillars. For instance:- a symmetrical visual setting was needed with equal numbers on either side of an axis. But the Binary expression was formed of an asymmetrical, odd number of uprights. Therefore put equal numbers of uprights each side of the axis but 'double-up' two stones together as a joined pair to give an actual odd number total. I.e. 20 stones will occupy 19 positions. (19 = 20. Or is it 20 = 19.) We can immediately see that this will surely be completely confusing. It certainly will be at a very distant date in the future. Wherever the joined pair is in the formation (and the trilithons as well) there will be serious confusion as the formation becomes damaged with the passage of millennia.

2). There was a desire to include, within the inner formation, a symbolic 'union' between stones. This could have been for 'religious' / 'ritual' demonstration of meaning to the local population at the time. That is, the pair of joined stones would have represented some type of male / female, or 'positive' / 'negative' chthonic meaning. Hard to prove in our modern time.

3). This inner formation required a central stone to its setting in front of the opening of the Great Trilithon to 'block' the axis through the slit, perhaps to a certain height. (As the height of the Bluestone pillars c. 2 metres.) This required a wider but tall stone but there was not one available of sufficient size within the available assortment of Bluestones. Therefore the solution was to 'join' two slender stones to make a wide one. This is uncertain because the typical width of each Bluestone pillar (the taller and more elegant ones) is circa two feet, but the slot through the Trilithon archway was only circa one foot wide or less. Theoretically it could be obstructed with only one existing pillar. In practise it may be that, because the passing, declining sun was a moving light source, then light rays would have changed their direction as

they passed behind the Trilithon and potentially still penetrated past a single pillar. It would really need a practical set-up of the relevant items to test this. (This detail also causes me to reflect upon whether the Altar Stone, at c. one metre wide, was ever intended to be set upright to obstruct the Trilithon slit. As I have frequently stated, I do not believe it was ever intended to. The Altar Stone is a different proposition to one of the Bluestones in so far as it is c. 16 ft. long and, on end in front of the Great Trilithon, it would have almost completely covered the slit, and also obscured a large part of the Trilthon which seems pointless. One of the primary and principle features of the whole Stonehenge design was the primacy and importance of the principle Axis through the monument from N.E. horizon at Durrington Down and then the Heelstone, to the distant barrow G 15 away in the S.W. direction.

4). In Stonehenge 3 (c) the two stones of the pair, 66 (tongue) and 68 (groove), were eventually erected in complimentary but separated and opposite positions forward of the front corners of the Great Trilithon (obviously a very 'privileged' / important focal point) but with their common t-and-g joint facing away from each other. To me its seems clear that this was to emphasise the fact that the original idea and purpose of 'two being able to represent one' had been firmly dumped. Therefore firstly there was NOT to be any attempt to have a physical arrangement of a particular number of uprights that actually represented a DIFFERENT number for the purpose of a Binary Expression. Secondly a tall, wide upright was not needed or intended in the final arrangement because it was not now planned for the main Axis through the Trilithon slit to be partially obstructed.

Can I then deduce more about the thinking that was implicit in all of this detail?

The Possible Effect Of a Pillar Erected On The Axis Immediately In Front Of The Great Trilithon.

If we are attempting to reconstruct the light beam through the slit of the Great Trilithon, between uprights 55 and 56, on the occasion of the setting sun at winter solstice, then we can see that a pillar in this position would effectively 'raise' the bottom of the light shaft that formed on the inner side of the Trilithon. The darkness below the beam would be 'raised'. This would reduce the beam's effective total vertical height. The most obvious reason for trying to do this was to 'tweak' the focussing of the light shaft as it rose across the face of the Heelstone around winter solstice. We can see, in the passage at Newgrange in Ireland, how the beam was focussed through the light box above the entrance so that, as well as being narrow sideways, the vertical height was limited rather than allowing the beam to enter through the whole height of the doorway.

I do not think that 'tweaking' the light-shaft in this way was a particularly profound or intellectually advanced idea on the part of the Stonehenge architect. It seems to me that trying to 'manage' the effect of the winter solstice 'light show' in this way is a purely natural development; a natural attempt to improve on the original plan for the light show across the face of the Heelstone once the monument was completed to the point where the

overall effect could be seen. It would be very difficult to calculate how high a pillar to install, possibly not even obvious that such a refinement would be useful, until after the light show was operational. But after this point it would be fairly easy to play around with a wooden barrier to represent a central pillar until it could be decided what was the actual size of pillar needed to focus the light shaft exactly as required. This may well be what happened in period 3(b) at the time of the Bluestone Oval.

Nevertheless, for several reasons I believe that the central pillar idea was discontinued in period 3 (c) when the final Horseshoe arrangement was fixed.

The primary reason for eliminating the central pillar, if it had been installed in Period 3 (b), was because the stone total of eighteen upright pillars was settled upon for the Horseshoe. This was to be the most important, over-riding fact of the Horseshoe. The point of a central pillar then ceased to be critical. It could be removed without destroying the primary function of exploiting the winter solstice light-show.

A second effect of re-designing the 3 (b) oval into the 3 (c) Horseshoe was that the visible remnants of the Oval in the form of obsolete Bluestone Trilithons and tongue-and-groove jointed pillars would allow, at a point in the future, for these remnants to be intellectually questioned and, hopefully, reconstructed as I have done here. This permits more investigation of the thought process that had gone into the design of Stonehenge during its development.

There has, for many years, been a lively debate amongst Stonehenge followers as to whether the priority view from the central area of the monument was intended to be towards mid-summer solstice sunrise towards north-east, and the direction of the Heelstone and Avenue, or towards the mid-winter solstice sunset between the uprights of the Great Trilithon and south-west.

The supposition implicit in these two viewpoints is that Stonehenge was created and built to view – celebrate – one of these events as priority over the other. Mid-summer solstice would have been a celebration of life and the power and joy of the sun, and the reliance and debt that the people owed to its existence and repeated life-giving summer warmth. Mid-winter solstice would have been a celebration of the turning point of the year when the gloom and darkness of dismal winter were reversed, the days began to lengthen, and spring could be eagerly anticipated.

Both of these situations rely on the usual viewpoint of archaeologists and Stonehenge commentators, repeated in countless works upon the subject of Stonehenge for many years. That is that the great celebration of Stonehenge, its function and practice, involved a few priestly representatives observing the particular solar event from within the stone circles and carrying out solemn ritual at the correct moment of sunrise or sunset. The great God of the sun is satisfied, propitiated, accepts the due prayers and homage offered and can now be relied upon to continue through its regular annual cycle of seasonal growth, harvest and prosperity for its subjects.

This seems to be the very common, unspoken and undescribed but generally implied method and purpose to any and all solar ritual that may have been performed. The standard overview of the term 'ritual' that is so beloved of archaeologists and routinely applied to the purpose and creation of so many ancient structures including Stonehenge.

It seems to me that so many commentators whilst giving this subject very little thought and being happy to repeat this old, oft-repeated description of the possible ritual purpose of Stonehenge, garnered from previous writing on the subject, have collectively failed to look the other way.

The collective opinion that ritual at Stonehenge, at either solstice was focussed outwards towards the particular solar event on the particular horizon is actually the wrong way round. The purpose of Stonehenge, the skill and precision within its design, and the intellectual objective of the monument was to bring the sun INTO the monument, not to direct the thought, desire, ambition of its human user OUTWARDS.

I have described at great length, in earlier pages, how the main and principle axis of the monument passes from mid-winter solstice sunset at the south-west horizon atop Barrow G 15, through the monument, out to to a very specific 'target' on the Heelstone, and beyond to the north-east horizon at Durrington Down where the mid-summer solstice sun rises. I have described how the precise point of mid-summer sunrise is not critical because the solstice sunrise sky at the time of sunrise is described across the face of the Heelstone and the horizon point will vary according to the observer's precise height, position on the axis, etc.

I have also described how the declining rays of the setting sun, as the sun approaches mid-winter solstice, progressively strike, in a light beam, through and between the uprights of the Great Trilithon and on to the inner face of the Heelstone.

The objective always, from the first day of building at Sarsen Stonehenge, was to create this effect of bringing light INTO the monument by a controlled and particular focus. It was always to be a play on the power of the sunlight to pin-point and illuminate the one and only specific target that I have so clearly described in previous pages of Regulus and the Regulus Group – specifically the distant, obscure, visually tiny and insignificant group of stars between Regulus and 31 Leo described in earlier pages. Stonehenge was designed to function at this one point in time – B.C. 2340 – when sun and Regulus were in the sky together at mid-summer solstice but in exact opposition at mid-winter solstice.

the star HR33, 828 and its neighbour

At mid-summer solstice, sun and stars rose together and the group is depicted by the face of the Heelstone as this happened.

At mid-winter solstice, sun and stars were in direct opposition and, with almost exactly level horizons in both directions, at the moment of sunset in the south-west, and a suddenly darkened sky, Regulus and the Regulus Group rose to the north-east as marked by the Heelstone. Completely invisible to the

naked eye at the horizon and Regulus only becoming more visible as it rose above the lintel of the Sarsen Circle just before the first Trilithon. To the mind that knew, position was marked in three dimensions.

Probably inevitably there was thought and attempt at improving the winter solstice light show. Could the sun's light beam be reduced and more specifically focussed? This was the effect in the passage at Newgrange (and possibly other Irish passage graves as well. It is curious how so many of the passage grave remains seem to suggest single standing stones just outside entrances that would therefore block the view from within but still allow a light beam to enter over the top from an elevated sun at a particular season.)

At Stonehenge 3 (b) the inner Bluestone formation appears to have been erected as an oval and there is suggestion (but no archaeological proof whatsoever has yet been found) that there may have been a central pillar in front of the Great Trilithon slit. The proposition of the existence of a pillar may be correct or it may just be the hopeful 'tidy-mindedness' of some writers who feel that this is the 'correct' way for great monuments to look when complete. Currently no writer has ever provided either proof that a central pillar stood here, or any kind of valid purpose for such. If there was, for a short time, a central pillar it would have obstructed human view from the central area towards the south-west winter solstice sunset. So therefore this would have meant that the setting sun, at this time, was not the visual objective of this aspect of the Stonehenge design.

However a central pillar would have reduced and targeted more precisely the size of a light shaft entering the monument. It would almost certainly have focussed the light shaft on to the face of the Heelstone and caused the lower edge shadow line to rise across the Heelstone face more sharply in a rising line to follow the Heelstone slit. Much more specific to a certain narrow time frame at winter solstice. If this was the case then the light shaft had been focussed – 'tweaked' – after Stonehenge was complete.

But in Stonehenge 3 (c) the central Bluestone arrangement was re-worked – rearranged – and the previous formation that shows the remains of trilithons and tongue-and-groove jointed stones was scrapped in favour of a much simpler arrangement of single vertical pillars. The fact was that the first formation of 3 (b) was complicated and would never be able to be recreated accurately at a distant future date after the predictable depredations of millennia that were likely to occur. But the more simple 3 (c) formation would eventually be recoverable. The central pillar in front of the Great Trilithon was not vital and did not form a part of the new requirement in the Bluestone formation for 3 (c).

Therefore it appears that we are all correct when we discuss the existence or not of a central pillar. But the discussion only works if we accept that the objective of the creation of Stonehenge was to bring sunlight INWARDS, and not for human eyes to worship to the sun OUTWARDS from the stone circles.