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Avery personal semblance of archaeoastronomy pioneer Professor Michael Hoskin, colleague, mentor and friend

Belmonte, Juan A.
jba@iac.es
Instituto de Astrofísica de Canarias & Universidad de La Laguna.

IN MEMORIAM

Michael Hoskin (London, February 27 1930 – Cambridge, December 5 2021)

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Resumen

Michael Hoskin es el nombre de un gigante académico cuyo recuerdo permanecerá siempre ligado a la astronomía cultural. Catedrático de Historia de la Ciencia de la Universidad de Cambridge, en el Reino Unido, donde se especializó primero en Isaac Newton y sus 'Principia', y después en la familia de William Herschel, con especial incidencia en la figura de Caroline Herschel, hermana del descubridor de Urano y mujer pionera en el mundo de la de astronomía, sobre la que escribió varios libros. En 1969, un editor londinense preguntó a Hoskin si había algún campo de la historia de la ciencia que aún no estuviera cubierto por la literatura especializada, lo que dio lugar a la fundación de 'The Journal for the History of Astronomy' [JHA], que Hoskin editaría durante 45 años y sigue siendo revista de referencia en el campo. Sin embargo, su relación con la astronomía cultural tal como la concebimos hoy comienza en 1981 cuando era Presidente de la Comisión de Historia de la Astronomía de la IAU, pues familiarizado con la efervescencia naciente en el campo, convocó en la ciudad universitaria de Oxford el primero de una serie de congresos de esta disciplina que acabarían portando el nombre de esta villa, del que el recientemente celebrado en La Plata (Argentina) constituyó su duodécima edición. Pionero en los estudios de arqueoastronomía en la cuenca mediterránea, sus trabajos le llevaron desde la isla de Chipre a la Península Ibérica y desde la Bretaña francesa a los contrafuertes del Atlas, midiendo más de dos millares de monumentos ciclópeos y megalíticos de todo tipo. Sus trabajos en Cerdeña y la fachada atlántica de la Península Ibérica son todo un referente. Durante tres décadas se esforzó por hacer comprender a la comunidad arqueológica las bondades de la arqueoastronomía como una arqueometría más, poniendo en valía su utilidad. La conexión del Profesor Michael Hoskin con la villa de Antequera y sus monumentos megalíticos, Menga, Viera y El Romeral va más allá de todo su trabajo de investigación reflejado en 'Tumbas, templos y sus orientaciones'. Su persona fue elegida como estandarte del saber hacer y de cómo la ciencia bien hecha puede servir para revalorizar el patrimonio cultural de un país. Durante más de un cuarto de siglo el autor interactuó con este catedrático de la Universidad de Cambridge que hizo de los monumentos megalíticos uno de sus objetivos vitales. Esta es la historia de esa relación mientras se construía un paradigma que ha convertido a los Dólmenes de Antequera y a la Menorca Talayótica en Patrimonio de la Humanidad.

Palabras clave: Michael Hoskin, arqueoastronomía, monumentos megalíticos, Antequera, Congresos Oxford.

Abstract

Michael Hoskin is the name of a scholar whose memory will remain forever linked to cultural astronomy. Professor of History of Science at the University of Cambridge, in the United Kingdom, where he first specialized in Isaac Newton and his 'Principia'. Later on, he would devoted a great deal of his efforts to the family of William Herschel, with special emphasis on the figure of Caroline Herschel, sister of the discoverer of Uranus and pioneer woman in the world of astronomy, about whom he wrote several books. In 1969, a London publisher asked Hoskin if there was any field of the history of science that was not yet covered by the specialized literature This led to the creation of 'The Journal for the History of Astronomy' [JHA], which Hoskin would edit for 45 years and remains a reference journal in the field. However, his relationship with cultural astronomy, as we conceive it today, began in 1981 when he was President of the IAU Commission on the History of Astronomy. Familiarized with the emerging effervescence in the field, he convened in the university city of Oxford the first of the series of conferences in this discipline that would eventually bear the name of this town, of which the one recently held in La Plata (Argentina) was its 12th edition. A pioneer in archaeoastronomy studies in the Mediterranean basin, his work took him from the island of Cyprus to the Iberian Peninsula and from Brittany to the foothills of the Atlas Mountains, measuring more than two thousand cyclopean and megalithic monuments of all kinds. His work in Sardinia and the Atlantic façade of the Iberian Peninsula is a reference in the field. For three decades, he strove to make the archaeological community aware of the benefits of archaeoastronomy, as one more archaeometry, highlighting its usefulness. Professor Michael Hoskin's connection with the town of Antequera (Spain) and its megalithic monuments, Menga, Viera and El Romeral goes beyond all his research work reflected in 'Tombs, temples and their orientations' his book of reference in the field. His person was chosen as a standard of know-how and of how well-done science can serve to revalue the cultural heritage of a country. The author of this homage interacted for more than a quarter of a century with this Cambridge University professor, who made megalithic monuments one of his vital objectives. This is the story of that relationship while building a paradigm that has turned the Dolmens of Antequera and Talayotic Menorca into World Heritage Sites.

Keywords: Michael Hoskin, archaeoastronomy, megalithic monuments, Antequera, Menorca, Oxford Conferences.

My mentor and missed friend, Professor Michael Hoskin, passed away a little less than a year before I remembered him in La Plata during the Oxford XII Conference. Although time heals everything, or so they say, I miss his emails (in the last years he did not move from his familiar entourage in Cambridge) always kind and affectionate. Warm as ever!, he used to write when saying good bye, like in the last email I received shortly before his passing away worrying about our situation due to the eruption of the Tajogaite Volcano in La Palma, and how this had affected our life and work, and indeed our observatories.

Much has been written about the background and professional skills and worth of Michael Hoskin, Emeritus Professor of History of Science at Cambridge University. His formidable work as editor for more than forty years of the prestigious *Journal for the History of Astronomy*, a reference journal in the field that continues to be published fifty years later, is just one of many examples. His work on the Herschels, and in particular on Caroline, the almost forgotten sister, is a worldwide reference.

His works on cultural astronomy, in particular archaeoastronomy, are collected in 'Tombs, temples and their orientations', recently translated into Spanish and published by the Conjunto Arqueológico de los Dólmenes de Antequera (CADA), so I will not dwell on it. He has been an inexhaustible source of inspiration (see Figure 1) for the tasks of this institution. These have allowed to positioning CADA as a point of reference, allowing the achievement that the dolmen complex were inscribed on the UNESCO World Heritage List in July 2016.

Therefore, in this brief tribute what I wish to do is to undertake a very personal portrait of Michael Hoskin and my interaction with him since that first meeting on the stairs leading to my institution, the Instituto de Astrofísica de Canarias, at Christmas 1993. A year before, I had contacted him to see if he would be willing to participate in a project of the Editorial Equipo Sirius about a pioneering work in Spain, of which I was the coordinator. In this project, state of the art research in archaeoastronomy, carried out in the Iberian Peninsula and in the Balearic and Canary Archipelagos would be collected.

Figure 1. Si non è vero, è ben trovato: Michael Hoskin's profile seemed to predestine him to understand what lay behind the cosmology of the Antequera Dolmens. Impressive Menga is orientated to Peña de los Enamorados. Image courtesy of CADA.

By that time, Michael had already been doing serious work in the Balearic Islands where he had begun, particularly in Menorca, a pioneering research on the orientation of the island's cyclopean monuments. In particular, the so-called 'taulas' and the funerary 'navetas' (see Figure 2).

Michael was a lover of beautiful sandy beaches and that had been his initial goal

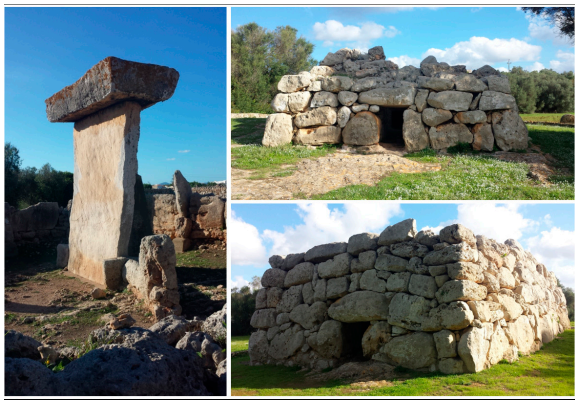

Figure 2. The cyclopean monuments of Menorca were the inspirations that led Michael Hoskin straight to archaeoastronomy in the late 1980s. Snapshots of Trepucó Taula and the pair of navetas of Rafal Rubí, close by but slightly differently aligned. Images by the author.

at the urging of his wife Jane. However, he was fascinated by the remains of the island's Talayotic culture, on which he was also able to discuss at length with his colleague at Cambridge, William Waldren, who was excavating at the site of Torralba d'en Salort. His early retirement from his teaching and academic duties at Cambridge University would allow him to open a new research adventure that would be his main scientific objective for the next thirty years. That pioneering work is now one of the main attributes that justify the Outstanding Universal Value (OUV) for the nomination 'Talayotic Menorca: an island cyclopean odyssey' for UNESCO World Heritage.

His relationship with Professor Antonio Arribas, from Granada University, put him in contact with one of his most brilliant collaborators, the Menorcan Margarita Orfila –whom he would meet on her island–. This allowed him to extend this work to the megalithic monuments of the Iberian Peninsula, in particular to the dolmen sites of Montefrío, Gorafe and Alhama de Almeria, and to the tholoi of Los Millares, in the provinces of Granada and Almería. His anecdotes from those campaigns are unique, but this is not the place to tell them.

Finally, Michael wrote three contributions for that 'Arqueoastronomía Hispana' that I was in charge of translating into Spanish. I still remember how struck he was by my translation of 'they got their meat' as 'obtenían su ración de proteínas', which sounded much better in Spanish. The book would finally see the light in 1994, but before that, Michael wanted to come and meet the people who had embarked him on this project.

Therefore, he and his wife Jane went to Tenerife at Christmas 1993. I still remember clearly our first meeting in the labyrinth of the gardens and corridors of our institution, in which he got lost despite his ability to 'find his way around'. It was a week of splendid weather for someone ‘fleeing the English winter' (sic). I still remember the meals discussing with Jane, when she used her argument 'on my book of history ...', about the past and present Spanish reality. At one of those meals, I told Michael that my elder brother José Ricardo used to spend the summer in a small town in Extremadura, Valencia de Alcántara, where there was one of the best collections of dolmens in the Iberian Peninsula. José knew them very well. His face lit up and he asked if my brother would like to join a fieldwork campaign. And that is when our story really began.

An emeritus, but very active, professor at a leading university was going to admit a researcher who was a novice in these matters

and who, up to that date, had not seen too many dolmens in his life. The following summer, Michael, accompanied by one of his most faithful collaborators, the Cambridge University documentalist Elisabeth Allan, went to Valencia de Alcántara to measure the orientation of some thirty dolmens, some of them extraordinarily well preserved (Figure 3) despite their great antiquity (more than 6000 years in average).
Due to a mechanical problem in their vehicle, they arrived a day late, an occasion that we took advantage of to measure the areas of Las Tapias and La Zafra where some six monuments still survived. Michael wanted to verify our data and we returned to Las Tapias the next day. Once he verified that the data matched, he would never question my measurements again for the next 25 years. Quite a show of confidence.
We still fondly remember those days when we even did some 'sightseeing', visiting an occasional menhir, even though they were not ‘measurable’. One thing I have to say, Michael was a tireless worker in the field, disciplined, organized and methodical, which left little time for other vagaries except the occasional gastronomic escapade. After Valencia, we traveled to Salamanca where we met another of the great ones, Professor Carlos Jaschek, a pioneer of European cultural astronomy and one of the fathers of the European Society for Astronomy in Culture, the SEAC. He was also a well-known stellar physicist who now resided in this city where a daughter of his was a lecturer at the university. His name will come up again later on.
If Michael Hoskin's first visit to Tenerife was a relaxing, playful and open-minded one, we wanted the second one to be more

Figure 3. Michael Hoskin poses with the author at the coverstoneless dolmen of Las Lanchas, in Valencia de Alcántara (Cáceres, Spain), one of the first dolmens they measured together in September 1994. In the lower image, he is shown with his faithful companion Liz Allan ready to measure the Anta de la Marquesa. Images by José Ricardo Belmonte. © The author.

academic. He came again in the winter of 1995 to give part of the classes of the Doctorate Course of History of Astronomy and Archaeoastronomy of the University of La Laguna. The weather in La Laguna that time was terrible and it still resounds in my ears the phrase he told me he repeated to himself while he was immobilized inside a rented SEAT Panda while it was raining cats and dogs: 'why am I here?'
The weather, however, improved and we

were able to take him on an academic visit to see the remains of the aboriginal culture in Grand Canary; sites that we had worked on together with Rosa Schlueter, Oswaldo González and César Esteban. As we showed him our team's findings at Roque Bentayga aboriginal sanctuary, he commented that Alexander Thom, one of the pioneers of archaeological studies in the UK, would have been delighted with what we were showing him. That put our self-esteem through the roof. Michael was like that, he knew how to bring out the best in people because he was good people.

In the following years. Michael devoted himself to measuring almost every megalithic monument in the Iberian Peninsula, the islands of the Western Mediterranean (what was left of the Balearic Islands, plus Sardinia, Corsica and Malta) and even some areas of North Africa, data that would culminate in 'Temples, tombs and their orientations', his archaeoastronomy masterpiece, at the turn of the century.

After that volume publication, the summer solstice of 2001 saw one of those 'cosmic' conjunctions that mark your career forever. Invited by the Sardinian researcher Mauro Zedda —who in summer plants tomatoes to survive, and in winter scrutinizes the monuments of the Nuraghic culture and their skies for living— we met in Sardinia with Professor Clive Ruggles, by then already a number one in the discipline, and Michael Hoskin. Those days in the Sardinian countryside were memorable. The conversations in Itañol, Spanglish or Sardish, and all possible language combinations, when there was a bottle of myrtle liqueur in the center of the table were splendorous. Thanks to Michael and his contacts, the horizon expanded to almost infinity. 'Reflejo del Cosmos', our joint book published the following year, would be the culmination of that exceptional year.

Not content with that, Michael would embark on another project. In those years, he had been working in Brittany. However, his head was puzzled because, unlike the rest of the megalithic world, where stable and relatively logical patterns of building orientation were recognizable, the megalithic monuments of Brittany were a chaotic mess with no order, except in the case of the so-called Angevin dolmens, some of which reached gigantic proportions. Michael arranged a round-trip flight to La Rochelle for the ridiculous sum of 1£ (sic) and we traveled from Madrid, again with my brother providing the vehicle, his good willing and his company. We visited almost every significant monument, from the Grand Menhir Brisé d'Er Grah, some bizarre cromlechs, like the one at Crucuno, to the huge Carnac alignments. Brittany is indeed a megalithist's dream (see Figure 4). However, the main goal was to try to understand the devilish orientation patterns of the dolmens. Thus, for example, on the one hand, at Mane Kerioned we had two dolmens next to each other perpendicularly orientated. But, on the other hand, in a same hill at Laniscat there were three allée couvertes oriented in three, practically opposite, different directions. Besides, the Treal Dolmen and its congeners had the axis of the chamber in one direction and the doorway perpendicular to it. These were a few among other puzzling uncertainties. Sometimes we wondered if the builders had not ingested some hallucinogenic drug during dolmen design.

We did not come up with the solution we would have liked, but we enjoyed the visit. So much so that, for the first time, Michael indulged in some relaxed sightseeing, visiting Mount Saint Michel or the beautiful walled city of Saint Malo (Figure 5). The devilish Brittany data would eventually be published as an Appendix (the IV) in the recent Spanish edition of 'Temples, tombs and their orientations'.

In the following years Michael concentrated on publishing all his work on the Herschels, while he eventually continued with his megalithic escapades, and at the same time I dedicated myself to investigate the temples and pyramids of ancient Egypt, but the contact was maintained. A new turning point came in 2008 when the Dolmens of Antequera began to take on a leading role. Michael had already been in

Figure 4. Brittany, a paradise for megalith lovers, can be a nightmare for an archaeoastronomer. In May 2002, we campaigned there in an attempt to understand the ins and outs of Breton megalithism. In panel (a) Michael Hoskin seems to wonder how on Earth they managed to erect the formidable 'stone table' at La Roche aux Feés. The builders of the dolmens at Treal (b) and Mane Kerioned (c) did not make things easier either. However, the strange rectangular cromlech of Crucuno, analyzed in his day by Alexander Thom, turned out to be one of the easiest pieces of the puzzle of megalithic Brittany. Images by José Ricardo Belmonte. © The author.

Figure 5. Only on very rare occasions, Michael allowed himself breaks in a frenetic pace of work. A relaxed visit to Saint Maló in May 2002 while we were analyzing Breton megalithism. From right to left, José Ricardo Belmonte, Michael Hoskin, Margarita Sanz de Lara and the author. That same day we visited the gigantic Champ Dolent Menhir of which unfortunately the 'orientation could not be measured', Michael complained.
© The author.

contact with Bartolomé Ruíz, Director of CADA, and that year Bartolomé and I, after a previous successful meeting in Évora (Portugal), agreed that it was time to start recognizing Michael Hoskin's work in putting Iberian megaliths on the map.

In September of that year, a conference called 'Cosmology across cultures' was organized in the city of Granada, which was also the XIV annual meeting of SEAC. At that event, Michael Hoskin received the first edition of the 'Carlos Jaschek' Award for cultural astronomy for his contribution to the discipline, awarded unanimously by the members of that society. Every self-respecting scientific conference must have an associated 'excursion' where places relevant to the theme of the meeting are visited. What better for a meeting on cosmology across cultures than a visit to the Dolmens of Antequera (Figure 6).

Michael was delighted acting as host and showing the wonders of the site to his colleagues and relatives. This was a moment in which Bartolomé took advantage of to pay him a new tribute with the inauguration at the CADA of the Michael Hoskin Solar Centre; a place where the cosmological role of these monuments in the worldview of their builders began to be recognized. That day precisely, Bartolomé would raise for the first time the idea of preparing the nomination of the Dolmens of Antequera and their environment to UNESCO World Heritage. A day to keep in memory and the beginning of a long journey of eight years, which undoubtedly was going to be worth it.

Shortly after, 2009 was declared as the 'International Year of Astronomy' by UNESCO and the International Astronomical Union (IAU). This was an event in which numerous initiatives were carried out in order to promote astronomy and astrophysics worldwide. One of these key projects was the 'Astronomy and World Heritage' initiative, promoted by Clive Ruggles from IAU side. This AWHI would try to identify places around the globe, from classical observatories to archaeological remains, where astronomy as a science, but also as a key piece of culture, could be used to define the Outstanding Universal Value of a property to be inscribed on UNESCO World Heritage list. Antequera dolmens were an obvious candidate.

At an international conference held at UNESCO headquarters in Paris that year I met Michael again and it became even clearer that this was a viable objective. That same year, he had donated to CADA his entire photographic collection with images of those cyclopean and megalithic monuments that he had studied and documented

for thirty years, thus safeguarding for the future a primary source of information, since part of those monuments no longer existed or had been severely altered.
Bartolomé Ruiz already had envisaged the more than certain possibility of the viability of the candidacy and therefore organized a series of courses, which received the name 'Antequera Milenaria', which highlighted the heritage value of the dolmens and their cultural and geographical environment. One of these courses, held in autumn 2011, was the 'First Michael Hoskin Seminar on Archaeoastronomy', in which, in addition to Michael himself, the leading figures in Spanish archaeoastronomy participated. The course aroused great interest and was widely reported in the media. The wheel was in motion. This, and a subsequent meeting at the University of Granada, would be my last interaction in the field with Professor Hoskin, since at over eighty years of age he no longer felt strong enough to continue to play the crazy goat in the rough fields of the Iberian lands. As he would acknowledge shortly thereafter, he had realized that he was not immortal.
The next occasions we met, it would be to spend a pleasant evening at his home in Cambridge where we were always received as if we were a member of the family. There we would talk about science, but also about the divine and the human, about what we had lived together during those years and about our plans. Antequera was also the protagonist of the conversation because the candidacy undaunted continued its course. A formidable dossier had been assembled and Michael's work was an integral part of the attributes. In September 2015, on Michael's behalf and at the invitation of Bartolomé, I

Figure 6.Michael Hoskin with his beloved wife Jane and Bartolomé Ruiz on the façade of the Dolmen of Menga during the visit of the participants of the conference 'Cosmology across Cultures' in September 2008. During this meeting, he received the first edition of the Carlos Jaschek Award for Astronomy in Culture. This visit was the genesis of the idea of presenting the candidacy of the Dolmens of Antequera to UNESCO World Heritage. Image courtesy of Bartolomé Ruiz and CADA.

participated in the ICOMOS evaluation mission for UNESCO. Michael should have been the person in charge of defending the landscape and astronomical aspects of the dolmens, but given his advanced age, it was my duty to act as alter ego. Indeed, a great honor and a huge responsibility.
I still perfectly keep in my memory the conversation with the archaeologist Margaret Gowen, ICOMOS evaluator, inside the Viera Dolmen while we were watching sunrise at the autumnal equinox. As an Irishwoman and a connoisseur of the astronomical aspects of Newgrange, Margaret was a tough nut to crack, She was very critical as was her duty, although now that I have dealt with her personally on several occasions

for issues on Menorca candidacy, she is also a first class professional, as well as a very approachable person. The fact that the skyline of the dolmens remained pristine must have convinced her, since her subsequent evaluation had to be positive enough for the candidacy to be approved. Thus,the Archaeological Ensemble of the Dolmens of Antequera was inscribed on the World Heritage List by UNESCO on July 15, 2016 in Istanbul.

That declaration and the merits of Michael throughout a whole research career were considered more than enough so that, at the proposal of the Junta de Andalucía, with the CADA and Bartolomé Ruiz at the head, the Kingdom of Spain awarded him the 'Gold Medal for Merit in Fine Arts'. Michael himself would receive it in December 2016 from the hands of King Felipe VI in an endearing ceremony at the Victoria Eugenia theater in San Sebastián, attended by his children. I was not present, Bartolomé was, but I can safely argue that this day was the culmination of Michael's research career in Spain, without detracting from his other scientific and academic merits recognized by other American and British institutions, or the IAU itself, which has safeguarded his memory for posterity by naming an asteroid as '12223 Minor Planet Hoskin'.

Michael and I have not always agreed on everything. For years, we had a 'tug-of-war' over whether the orientation patterns of many megalithic groups obeyed the movements of the sun or the moon. Michael, as a good British sun-lover —that is how he started his Menorcan journey— is a convinced solarist while I sometimes, but not always, reserve spaces for the moon, which has led me to receive the affectionate qualification of 'lunatic'. This debate is still open today and I still wonder if behind the internal distribution of the Dolmen of Menga (the orientation of its central axis to the Peña de los Enamorados is unquestionable, see Figure 1) does not hide a lunar justification. This is something that can be verified in situ in a few years during the next major lunistice. The cosmology behind the Dolmens of Antequera may not have revealed all its keys.

I cannot end this story without talking about Michael and his legacy. He has been one of my mentors, perhaps the most important throughout my career and I dare say that without his support I would not be the researcher I am today. The community of scientists devoted to cultural astronomy, not only in Spain, but worldwide, owes him a great debt. I have no doubt that Spanish megalithic studies have been enhanced by the work of Michael Hoskin.

Michael felt a special bond with Antequera, a feeling that was mutual. His memory will remain there forever (there is his photographic and documentary legacy), the memory of a man who loved science and who fell in love with the Mediterranean and its people, not only because of their sun, but also because he felt close to them. With his affection, education, kindness and good willing he always proved it to us. Michael Hoskin died peacefully at his home in Cambridge, England, on December 5, 2021. *¡Va por ti Michael!* we will never forget you.