# Vinicio Barocas

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Having been educated at the Arcetri School of Physics in Florence internationally renowned through the presence of Fermi, Persico, and Rossi in 1938 the 24-year-old Vinicio Barocas was one of the many young men invisibly expelled by the academic community by the implementation of the Race Laws. Having just graduated, he was obliged to seek his first job abroad: he was too young to be seriously considered by the prestigious American institutions to which he applied, like many other applicants. Yet, after many adventures, he became an eminent astronomer in Great Britain.

An outstanding school: physics at Arcetri

Vinicio Barocas was born in Alexandria in Egypt of Italian parents on 2 August 1914. He came to Florence to study with his younger sister Licia; in July 1934 he enrolled at the University and in 1938 graduated in physics, with a thesis entitled «Distribuzione e costituzione delle protuberanze solari» and a mark of 108/110<sup>1</sup>. The Institute of Physics was part of the Faculty of Sciences with the linked Astrophysics Observatory at Arcetri which, under the leadership of Antonio Garbasso up to 1933 and then of Giorgio Gabetti, was oriented towards new frontiers in astrophysics. The mood of the time emerges clearly in the memoirs left by Michele Della Corte, who with Barocas was one of the five physics graduates at Florence in the years 1938-39<sup>2</sup>. After the enthusiastic leadership of the nonconformist Gilberto Bernardini, his

Link to other connected Lives on the move:

Licia Barocas Giuseppe (Beppo) Occhialini Giulio Racah Bruno Rossi

<sup>1</sup> List of graduates in physics of the University of Florence, *Annuario per l'anno accademico 1938*, Florence, Tip. Galletti e Cocci, 1939, p. 503.

<sup>2</sup> See the outstanding account Arcetri negli anni '30-40 nei ricordi di Michele della Corte, in Laura Della Corte (ed.), Commemorazione di Michele Della Corte, Florence, FUP, 2001, pp. 39-55, partly at <<u>http://theory.fi.infn.it</u>> (accessed 4 February 2019), and also the memoirs of lecturers from that period Bernardini e Daria Bocciarelli, in Alberto Bonetti, Massimo Mazzoni (eds.), L'Università degli studi di Firenze nel centenario della nascita di Giuseppe Occhialini (1907-1993), Florence, FUP, 2007, with the list of graduates, Ibidem, p. 63.

successor Laureto Tieri, a tidy man, not a genius, «in the course of a few years managed to create a void [...] For us youngsters what was truly disheartening was the slavish, even absurd, attitude shown by the majority of the university staff». They did not react even on hearing that «... "It is time to stop teaching Jewish mathematics in our universities...." referring to Einstein's theory of relativity and Levi-Civita's absolute differential calculus»<sup>3</sup>.

Meanwhile Bernardini had moved to Rome to the chair in spectroscopy, Giulio Racah to the chair in theoretical physics at Pisa, Dario Bocciarelli to the Istituto superiore di sanità, and Giuseppe (Beppo) Occhialini emigrated to Brazil in 1937; the haemorrhage of talent from an outstanding school was then fatally compounded by the Race Laws<sup>4</sup>.

#### A graduate without a future

The newly graduated Barocas was obliged to seek his first post abroad. The Emergency Committee in Aid of Displaced Foreign Scholars in New York opened a file in his name after receiving a letter from him, dated 27 January 1939, which was actually more broadly addressed to the Institute of International Education where Stephen Duggan, president of the ECADFS, was working. His application was recommended for two possible fellowships for foreign students in the United States: one at the University of California at Berkeley and another at the Harvard College Observatory. He was advised, however, «not to have any illusions... First and foremost his qualifications were not sufficient, and in the second place these two fellowships are also open to American students, and there are so many American candidates at the present time that a foreign student is at a disadvantage»<sup>5</sup>. Sure enough,

<sup>3</sup> Thus Michele Della Corte in Arcetri negli anni '30-40, cit.

<sup>4</sup> Roberto Casalbuoni, Daniele Dominici, Massimo Mazzoni, Giuseppe Pelosi (eds.), *La fisica ad Arcetri. Dalla nascita della Regia Università alle leggi razziali*, Florence, FUP, 2016. See also Vincenzo Schettino, *Le scienze sperimentali ed esatte nell'ateneo fiorentino*, in *L'università degli studi di Firenze 1924-2004*, Florence, Olschki, 2005, especially pp. 213-221. Barocas is not mentioned.

<sup>5</sup> NYPL, MAD, ECADFS, I.B. Non grantees, b. 40, f. 9, «Barocas Vinicio», 1939, Jessy Douglas (research secretary) to Vinicio Barocas; Jessy Douglas to Charles Lipman, University of

his attempts failed. The man in charge at the Harvard observatory, Harlow Shapley, who had put himself out to have the excellent physicist Bruno Rossi, was not thrilled by a young man only just graduated at the famous Arcetri school: the list of applicants for research grants was very long and «Dr. Barocas did not stand sufficiently high in the list to receive favourable action by the University or the Observatory»<sup>6</sup>. To take him on would be unfair to young American physicists. He should try again later, after a year or two. But Barocas could not wait that long. And his being sent the addresses of the Comitato di assistenza per i profughi ebrei della Germania in Rome and Milan was quite useless.

#### In Great Britain with a recommendation

As early as 29 November 1938 he had also made contact with the Society for the Protection of Science and Learning in London, even before the ECADFS had suggested it to him. He declared himself available to go *anywhere*, and to accept *any* position. He said he knew Arabic, French, Italian and English. He attached a short statement from the director of the Arcetri Astrophysical Laboratory, Giorgio Abetti, addressed to the secretary of the SPSL: the professor described him as «very capable and [...] highly raccomandable», able to fill any position which required competency in physics<sup>7</sup>. Miss Simpson's reply was not at all encouraging: «I am afraid that we are unable to assist you», given that the Society was restricted to assisting scholars who had held academic positions in research or teaching from which they had been dismissed. She added a further reservation: she was not sure if in Great Britain Jewish organizations would help *Italian scholars*, even though *displaced*. She nonetheless suggested trying the Comité international pour le placements des intellectuels réfugiés, which was in Geneva, and perhaps the

California, both 10 February1939.

<sup>6</sup> *Ibidem*, letter from Harlow Shapley to Miss Drury, 17 March 1939.

<sup>7</sup> BLO, MS, SPSL, b. 467/2, f. «Barocas Vincio [sic]», 1938-41, letters from V. Barocas, Florence, 29 November 1938 and from Giorgio Abetti, 2 December 1938.

Jewish Professional Committee in London<sup>8</sup>.

#### No salary, but bed and board

Of course, there was no adequate response to the current emergency created by the Fascist Race Laws in Italy. Vinicio did not delay. On 4 January 1939, while still in Florence, at the address of the engineer E. Levi in via Bonifacio Lupi 27 - not from the Norchi boarding house on Lungarno della Zecca as in the earlier letters - he contacted Dr. Wilfred Hall of the Tynemouth Observatory. He introduced himself as a pupil of Giorgio Abetti, who was internationally famous, and offered to work as an astronomer even without a salary, for only bed and board. Abetti himself considerately wrote to his British colleague, with whom he had friendly relations. At the end of January the two had reached an agreement on the young scholar: Barocas would be with Hall for two or three months «at the conditions that you say, accepted with pleasure, and with no responsability on your side for keeping him». He would be paid travelling costs only and any subsequent expenses would be met by his brother, a surgeon in Alexandria in Egypt. In short, Hall need not be worried: Barocas was just at the start of his career, he had everything to learn and nothing to expect; moreover he was an easygoing chap, so much so that before the «current circumstances» Abetti, as he explained, would have kept him on<sup>9</sup>. The experience with Wilfred Hall was probably satisfactory: the young scientist continued his research on the solar spectrum. But it was short-lived, though longer than expected. At the beginning of July 1939, Barocas again wrote to Miss Simpson, asking her to to find him a position in another astrophysical observatory, if not in Great Britain, where it was quite difficult, then at least somewhere in the British Empire<sup>10</sup>. This time Miss Simpson to begin with sent him the questionnaire to

<sup>8</sup> *Ibidem*, letter from Miss Simpson to V. Barocas, 7 December 1939.

<sup>9</sup> *Ibidem*, in the Barocas file and also copies of letters from Giorgio Abetti to Wilfred Hall, but not viceversa, 9 January 1939 and 30 January 1939.

<sup>10</sup> Ibidem, letter from V. Barocas to E. Simpson, Tynemouth, 7 July 1939 and her immediate

complete, while stating that in Great Britain there were more foreign astronomers than were required. But at least she was treating him as one of them and no longer as a mere student.

#### Internment in Canada as an enemy alien

Italy's entry into the war transformed him instead into an enemy alien. He was taken from Hall's house in Northumberland, where he had lived for six months, and was interned in the camp at Warth Mill, Bury, Lancashire, together with about one thousand Italians. From there he was sent to Montreal in Canada on the SS Ettrick on 3 July 1940, and was fortunate not to have sailed on the other ship which was taking Italian interns to Canada: the SS Arandora Star, leaving on 2 July 1940, was torpedoed and 805 persons died<sup>11</sup>. He managed to send news about himself: he was in Camp S, with number 31. The person who intervened to help him was Wilfred Hall himself, who had learned from Lord Eustace Percy, the rector of King's College, Newcastle, the possibility of applying to the Royal Society for «persons eligible for release from internment» (cat. 8): «I am anxious to obtain the release from the internment of an Italian Jew», he wrote on the 16 September, summarising the series of events that had occurred. To add weight to his request he argued that the keen and capable student who had worked with Professor Abetti in Florence, and later with him, was useful to science and obtaining his release would thus be in Great Britain's interests: «If allowed to return to this country he would be highly competent and [...] perfectly willing to take up research or academic work»<sup>12</sup>. As for Barocas' loyalty to Great Britain, Wilfred Hall stood surety for him and specified others who were available, among them the mathematics professor, George R.

reply, 8 July 1939.

<sup>11</sup> The list of Italian residents in Great Britain who died in the sinking of the Arandora Star, in Anglo Italian History Society, *Arandora Star Italian Victims* <a href="https://anglo-italianfhs.org.uk">https://anglo-italianfhs.org.uk</a> (accessed 25 April 2019).

<sup>12</sup> BLO, MS, SPSL, b. 467/2, f. «Barocas Vincio [sic]», 1938-41, letter from W. Hall to A.V. Hill, 16 September 1940.

Goldsborough of King's College, and the vicar of Tynemouth.

#### Devoted to science, loyal to Great Britain

The application sent to Professor Archibald V. Hill, Nobel prizewinner in Medicine and the representative of the Royal Society with the Ministry of Labour, was passed by them to the SPSL; Miss Simpson therefore reappears, because it was the SPSL which had to deal with investigations for category B and she sought confirmation that the referees suggested by Hall were really willing to vouch for Barocas' honesty and loyalty to Great Britain, as well as his significance for science<sup>13</sup>. Letters of recommendation arrived within 2-3 days: Barocas was wholly devoted to his research in astrophysics and had no leanings towards politics, assured Professor Goldsborough. «His sole anxiety was to find an opportunity for scientific work either in this country or elsewhere, where he might continue his investigation in peace»<sup>14</sup>.

Hall wished to make it clear that the productivity of his young friend had suffered many interruptions because of the international situation and that he was only 26 years old. He had, however, already published in the «Astrophysical Journal» in 1939, and he himself could personally testify to the importance of the research undertaken on the solar spectrum. Professor Harry Hemley Plaskett, a Canadian astronomer at Oxford, had been favourably impressed by Barocas, and Professor Curtis of King's College had offered him a fixed-term position. Hall added more names and letters from persons of authority who had known Barocas at home, to vouch for his loyalty. He even sent copies of private correspondence between him and the young academic, to be used discreetly, but as proof of how well he now knew him.<sup>15</sup>

<sup>13</sup> *Ibidem*, Miss Simpson to W. Hall, 24 September 1940.

<sup>14</sup> *Ibidem*, see at least the letter from G.R. Goldsborough, 24 September 1940.

<sup>15</sup> *Ibidem*, letter from W. Hall to E. Simpson, 28 September 1940. This private correspondence does not appear in the SPSL file, where the numerous references requested and received are found.

On 2 October, after several exchanges by letter with further guarantors, Miss Simpson assured Wilfred Hall that the matter was proceeding and that the special tribunal of the Royal Society would soon be examining his case. In thanking her and urging her, Hall conveyed his intention of showing his appreciation to the SPSL with a financial contribution. He did so very generously, judging by the thanks he received. What else could he do for Barocas? Once he had been released, would he have to remain in Canada? His mentor wanted to know so that he might if need be find him work in astronomy there<sup>16</sup>.

#### Waits and misunderstandings

Complications continued; the Italian scientists - for whose release Miss Simpson said that they had applied for in the previous August - were still waiting. As for staying in Canada or not, it was hoped that the interest of Canadian universities in the scientists could change matters, but until then the released men had of necessity to return to Great Britain<sup>17</sup>. Hall would gladly have seen him return, but he thought it would be better for Barocas not to have to face a long voyage, not free from risks, and that he might find temporary work in North America to compensate him for his hard experience. If it was not possible in Canada, was it in the United States?

In the last letter received, which Hall copied in confidence to the sympathetic Miss Simpson, the young man seemed worn out: «every day that passes makes me lose the little hope I had in the early days when I was in England and even here. The one good thing in all the tragedy of my life is to know and feel that there is still someone who thinks of me and is doing his best for me». In the camp he was not permitted to write more than 24 lines. He was

<sup>16</sup> *Ibidem*, letter from W. Hall to E. Simpson, 22 October 1940 and her reply, 24 October 1940. For a good half of her letter, the SPSL secretary explained its activities and sources of funding, which were private, in addition to the membership fees from individuals and societies.

<sup>17</sup> Ibidem, letter from E. Simpson to W. Hall, 24 October 1940, and his reply 5 November.

not able to receive money through British banks<sup>18</sup>.

#### What would be best? And where?

Hall realised this: he sought special authorization to send money but this was refused. He implored Miss Simpson to make some suggestions, in private. She tried to make him take a less pessimistic view: the Canadian authorities had always been quite rigid towards foreign scientists and scholars, but perhaps if Barocas had had an invitation from a Canadian observatory, and if meanwhile he had managed to obtain his release, he might be accepted. For the United States he needed a *non quota visa*, and for that it was necessary to demonstrate that he had been active as a scientist at least in the last two years. Hall, however, had contacted the famous astronomer Heber Curtis at the Ann Arbor observatory, in the University of Michigan. The latter replied to him unenthusiastically and forwarded the request to Harlow Shapley at Harvard, evidently unaware that his colleague - with whom he had joined the so-called Great Debate or Shapley-Curtis debate in astronomy - had already expressed himself unfavourably when Barocas had made his application to the Emergency Committee in New York<sup>19</sup>.

Perhaps returning to Great Britain was the best thing; this is what the majority of interned scholars assisted by the SPSL did, especially if they had the intention of taking British citizenship<sup>20</sup>. On 4 December still no news, complained Hall, who had also been in contact with Barocas' relatives in Egypt. More than a month later, Miss Simpson at last informed him that she had known that the scientists whose release she had requested were about to be sent back to England, and this included Barocas. Letters sped back and forth in Hall's unceasing attempts to help the young Italian. On 14 January

19 See *supra* and *lbidem*, copy of letter from H. Curtis to W. Hall, 10 January 1941.

<sup>18</sup> *Ibidem*, copy of letter from V. Barocas to W. Hall, from Canada, 6 October 1940 and received 1 November, attached by Hall to his own letter to E. Simpson, 5 November 1940.

<sup>20</sup> *Ibidem*, E. Simpson to W. Hall, 7 November 1940, and the copy of a brief note from him to E. Simpson, 4 December 1940.

Miss Simpson offered an apology: the Home Office Aliens Department had caused a mix-up, the list of those released which she referred to was still that for the first group, dating back to July of the year before. Barocas' name was in a list several months later, and his release had not yet been authorized. Moreover, she saw no possibility of arranging his immigration to the USA, nor of finding him any kind of position as an astronomer. They had had a similar case, now returned, and the British observatory in which he worked first would now have closed. This concerned a German astronomer, with more experience, already director of an observatory, with a wife and son still in Germany unable to leave because of the war. And yet another, a Czechoslovak, older and further on in his career than doctor Barocas, who had arrived in Great Britain as early as 1934 and again out of work<sup>21</sup>. In short, bad for all and little to celebrate.

#### As soon as possible

Hall replied that Vinicio's brother was begging him to persuade him not to cross the ocean. And he himself was placing his hopes in a reply from his Michigan colleague, which he had evidently not received. But it was Barocas who wrote to him from the camp in Canada that he did not want to ask Professor Curtis for anything, at least until he was obliged to: «*I desire mostly to be back with you the soonest possible*»<sup>22</sup>. It is not clear if Hall knew this: he persisted with his idea: he at once sent a telegram to Miss Simpson asking for Barocas' release to be postponed, because the distinguished Heber Curtis was finding him a post. Miss Simpson therefore put the request in motion and the correspondence went forward on different tracks. Which of them knew what Barocas wanted? Which one was keeping him informed? In any case, Simpson found out that the Canadian government would not agree to

<sup>21</sup> The reference is to the cases of Gunther Archenhold and Arthur Beer, in *Ibidem*, letter from E. Simpson to W. Hall, 20 January 1941.

<sup>22</sup> *Ibidem*, the letters quoted in the text and that from V. Barocas to *Dear Dr. Hall*, 19 January 1941.

release those interned in Canada to seek work there. Curtis confirmed that Hall's hopes in the presumed opportunities in America were baseless: this was the sort of thing that happened, information was distorted in wartime, when people talked at a distance. Clarity was needed and meanwhile Barocas had still not been released<sup>23</sup>. In this waiting for news, what was especially unclear was how the procedures applied to Italians rather than to Germans and fugitives from Nazism<sup>24</sup>.

On 8 March Barocas sent news of himself in a telegram; he was in Granville Camp, in Douglas on the Isle of Man<sup>25</sup>. So it was not a matter of release, which would have seen him free and able to find work in North America, but of semi-internment. Luckily it was brief. Hall admitted to Miss Simpson of the SPSL that he was confused, and she in her turn had not been properly informed and had been shaken by the first air raids on Cambridge. On 25 March the young Italian personally thanked Miss Simpson: he had returned to Hall's home in Northumberland and the latter was as ever trying to find him work. It must have been to some extent connected to the strain of wartime, given his position as an Italian and given too the wariness prevailing towards foreigners, as Miss Simpson admitted<sup>26</sup>.

#### A career: from assistant to director

From 13 August 1941 to 30 June 1949 he was part of the staff at the Royal Observatory at Greenwich, at the Abinger site (Royal Observatory Greenwich Abinger Magnetic Observatory), active from 1923 to 1957. Here he was employed as an *observing assistant* for the first year 1941-42, as an *assistant* from 1942 to 1945 and as an *experimental officer* in the following year, all fixed-term positions.<sup>27</sup>

<sup>23</sup> *Ibidem*, letters from H. Curtis to W. Hall, 26 January 1941.

<sup>24</sup> See on this point the letter from E. Simpson to W. Hall, 8 March 1941.

<sup>25</sup> *Ibidem*, letter from W. Hall to E. Simpson, 12 March 1941, which cited the telegram from Barocas received 8 March.

<sup>26</sup> *Ibidem*, letter from W. Hall to E. Simpson, 30 May 1941 and his long reply, 4 June 1941.

<sup>27</sup> See <http://www.royalobservatorygreenwich.org> (accessed 9 January 2019).

On 8 February 1947 he obtained naturalization, after taking the oath to the Crown, and in virtue of the work undertaken during the war as a civil servant at the observatory<sup>28</sup>.

In July 1947 he left Abinger to move to Preston with his wife Winifred Esther. He was named director of the Jeremiah Horrocks Observatory, which had been taken over by the Education Department of Preston Council after the death of George James Gibbs, the engineer, astronomer and inventor, on 22 February 1947. Barocas contributed to the expansion of the organization through the creation of the observatory dedicated to Wilfred Hall at Alston Hall, in the vicinity of Preston; from 1957 a telescope donated by the Royal Astronomical Society was sited there. Under his prolonged direction, the observatory became a first-rate regional centre in the teaching of astronomy both for school students and for students of the University of Central Lancashire (UCLAN, formerly Preston Polytechnic)<sup>29</sup>.

Vinicio Barocas was president of the British Amateur Astronomers Society and of the Unione internazionale degli astrofili dilettanti. At the height of his career he obtained a chair in astronomy at the University of Central Lancashire. On his retirement in August 1979 he was succeeded by Keith Robinson; shortly after he was awarded the title of emeritus professor<sup>30</sup>.

He travelled throughout the world attending conferences in astronomy: on one tour of the Netherlands he attended a conference in a different city every night. He produced around thirty-eight scientific papers and translated into English some works of Italian colleagues, including Margherita Hack and Giorgio Abetti; he was a collaborator of Guglielmo Righini, the director at Arcetri. He did not return to Italy but did not sever links with his country of origin. In 1954 he became a member of the Società astronomica italiana and

<sup>28</sup> *Ibidem* and «The London Gazette», 25 April 1947, p. 1828 <<u>https://www.thegazette.co.uk</u>> (accessed 9 January 2019).

<sup>29</sup> Jeremiah Horrocks Institute, *History of Astronomy in Preston* <<u>http://www.star.uclan.ac.uk</u>> (accessed 9 January 2019).

<sup>30</sup> *Vinicio Barocas*, «NorWest Rotary. Magazine of Rotary District Cumbria and Lancashire», 128, 2017, p. 18 <<u>http://www.rotary-ribi.org</u>> (accessed 9 January 2019).

in 1959 he came to Florence as a guest of the Observatory where he had been trained.

Vinicio Barocas died in Preston on the 16 November 2016, aged 102.

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Patrizia Guarnieri

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