framework for the interpretation of the observational data that will be obtained on the basis of (a) and (b).

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ESO'S EARLY HISTORY, 1953–1975

III. 26 May 1964: ESO Chooses La Silla*

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"Fehrenbach und ich haben den Eindruck, daß der Berg ein großer Glücksfall ist."
From a letter of O. Heckmann to J.H. Oort of April 21, 1964.

In the course of the year 1962, towards the end of the site testing in South Africa, ESO became actively interested in the possibilities offered by the Andes Mountains in South America. After several years of exploration from American side, the Andes had been opened up for astronomy.

Jürgen Stock's Early Explorations

Among the first who explored the Andes was G.P. Kuiper of the University of Chicago, who examined in March 1959 the area from Antofagasta southward, mostly from the air with the help of the U.S. Air Force [1]. But fully involved in the tests over the years was Jürgen Stock. Stock received his degree in astronomy with Heckmann at Hamburg, and had subsequently been associated with the Boyden Observatory in South Africa. Through his education as an astronomer, his knowledge of the Spanish language, and a sense for pioneering in the almost inaccessible Andes Mountains, Stock became the explorer par excellence for AURA's project. His remarkable reports on the early AURA activities should be read by everyone who wishes to get an idea of what it meant, to conquer the Andes for astronomy [2].

Stock organized in April 1959, as a member of the staff of the University of Texas, a site survey initiated by the Universities of Chile, Chicago and Texas [3]. This was initially meant only for finding a good site for a 150 cm telescope in the vicinity of Santiago, but the survey grew in importance when it appeared that outstanding conditions might be found farther northward. As a result of Kuiper's move to the University of Arizona in 1960, AURA, supported by NSF, took over the management of the "Chile Project" from the University of Chicago [4]. On November 23, 1962 the AURA Site Survey Team chose Cerro Tololo as the site for the Observatory, a decision ratified by the AURA Executive Committee on December 1, 1962.

For the measurement of image quality Stock used a criterion different from that applied by ESO. Instead of going by the appearance of the diffraction image as observed with the Danjon telescopes, image motion was used: the rapid, erratic displacement of the stellar image. In the earlier deliberations of ESO this method had been contemplated – Couder suggested it early in 1954 [5] – but not chosen because it required much higher stability of the telescope mounting. Stock used a double beam telescope which measured the relative motion of images in the superimposed fields of two telescopes fixed on one mounting, of 10 cm aperture and 165 cm beam separation [6].

ESO's Growing Interest in the Andes

News on the promising results of the American tests reached European astronomers, first bit by bit, then more impressively. The minutes of the May 1959 meeting of the ESO Committee, referring to the work in the Santiago area still read: *"This project will have little influence on the development of ESO."* But soon after, interest grew rapidly, and the June 1961 meeting decided to send an experienced ESO observer to Chile with one of the Danjon telescopes used in South Africa.

Naturally, the possibility of finding a site better than those considered so far in South Africa, was exciting news. But there was also something else: a certain apprehension about South Africa's future due to the growing unrest in this country. Thus, a letter of April 1960 by Danjon to Oort contains this paragraph: *"Il règne une certaine inquiétude en France au sujet de l'Afrique du Sud, mais je m'efforce de la conjurer en expliquant que le projet ESO n'est pas nécessairement lié à l'Afrique – – –"*, and in his reply of May 10, 1960, Oort writes *"En vue des difficultés que vous signalez pour la France, difficultés qui existeront aussi dans d'autres pays, et en vue du fait que les Américains ont récemment obtenu des indications favorables pour les emplacements dans*

* Articles I and II appeared in *Messenger* **54** (December 1988) and **55** (March 1989).

le Chili, il faudra envisager sérieusement la possibilité d'un changement radical vis-à-vis de l'endroit de notre observatoire." Yet, a letter by Danjon to Oort of the 31st of that same month ends with: *"Je me contente de vous informer que la situation politique en Afrique du Sud n'est pas considérée ici comme une objection."* [7]. A discussion of the political aspects of the ESO enterprise at the EC meeting of July 1960 confirmed this view. Political concern, although undeniable over the years of ESO's activities in South Africa, never became the dominant element in the considerations with regard to the choice of the site; the decision eventually made was a clear-cut one, based on the superiority of the South American findings.

About the time of the above correspondence, on April 28, 1960, Oort, as Chairman of the EC, wrote to his friend C.D. Shane, Director of Lick Observatory (and serving at that time as acting Director of Kitt Peak Observatory), asking for information on the South American results. From Shane's reply, of May 6, 1960, I quote the following:

"– – – There is every indication that the climatic conditions in the neighbourhood of Vicuña are superior to those farther south. – – – I believe if the ESO Committee is interested we could cooperate in the matter of the site survey to the advantage of both groups. Also, if a suitable mountain top should be found satisfactory to all concerned and if the top area were large enough, perhaps all three observatories [Shane refers here to AURA, ESO and CARSO] could be located there with, of course, a division of the area into distinct parts for administrative purposes. If this could not be done, the next best thing would be to locate the ESO and the American observatories on mountains not too far separated so that there could be easy communications and joint meetings for the interchange of ideas. I hope you will call me for any assistance I can render to the ESO project." [8].

The November 1961 meeting of the ESO Committee pursued the idea of participating in the American site testing and also expressed the wish for one or more of the Committee members to visit Chile.

Muller and McSharry Join Stock's Group

After preparatory correspondence in June and July 1962 between Blaauw as Secretary of the ESO Committee and Stock [9], two members of the ESO site testing team joined Stock's group: the team's supervisor, A.B. Muller, and P. McSharry, both experienced observers. They arrived in Chile late November. A stay of about two months was foreseen for the purpose of establishing the correlation between observations made with the Danjon telescope and those done by AURA. It did not aim at testing other mountains than those covered by Stock.

Muller and McSharry, with the support of Stock's group, worked on two mountains: first, from December 6 to 19 on La Peineta, just over 3000 m high in the neighbourhood of Copiapo and about 300 km north of La Serena; next, on Cerro Tololo, the AURA site, from December 30 to January 13, 1963. The mountains are marked on the map on page 25. For both, meteorological observations had been made over a longer period by Stock's group, so that it was possible to arrive at some general conclusions, among which:

– Temperature fluctuations during the night were extremely small, much smaller than on the South African sites;

– Image quality was better than in South Africa: very good and constant on La Peineta and good on Tololo;

– Long spells of clear weather appeared to be a common feature of the climate in the Andes whereas they were rare in South Africa;

– Photometric quality was very good on both mountains.

Muller submitted a report on the two-month work at the February 1963 meeting of the ESO Committee [10]. Impressed by the report, it discussed in some detail the implications: living conditions, construction costs, price levels, etc. in Chile, and the possible relation to AURA. The EC decided to send a small group from among its members to Chile for further investigation.

At this point, the reader should remember that meanwhile, effective the 1st of November 1962, Otto Heckmann had become ESO's provisional Director. We shall return to this appointment in the next article dealing with the general administrative set-up of ESO after the Convention had been signed. In the present context it is important to note that from early 1963 Heckmann more and more took ESO's developments in hand.

The June 1963 AURA-ESO Summit Meeting in Chile

The mission to Chile planned in the February 1963 meeting of the EC took place in June 1963. Participants were: J.H. Oort (Chairman of the ESO Committee), O. Heckmann (ESO's Director), Ch. Fehrenbach (Chairman of the Instrumentation Committee), H. Siedentopf (Chairman of the Site Selection Committee) and A.B. Muller (Superintendent of the ESO activities in Chile). Also came to Chile F.K. Edmondson (President of AURA), N.U. Mayall (Director of Kitt Peak Observatory), and J. Stock, who by that time had become Director of Cerro Tololo Inter-American Observatory. On June 6 the two groups met in Santiago and visited the Chilean Observatory on Cerro Calan near the city, and next proceeded to the La Serena area. Heckmann had arrived in Chile earlier than the other ESO officials for contacts with government departments, the universities, ambassadors, building firms, etc.

On June 8, they undertook the trip on horseback to Tololo, where most of June 9 was spent for inspection of the AURA site. From there, both groups went on June 10 to the neighbouring mountain Morado on the AURA territory, south of Tololo; it was AURA's suggestion that this mountain, with its large surface and well tested, favourable observing conditions, might offer a suitable location for the ESO Observatory. This time, most of the trip was done per helicopter of the Chilean Air Force so that on Morado ample time was left for a summit meeting – in the double sense of the word. Principal subject of the discussion was the possible relation between the AURA and ESO projects in case ESO should decide to settle here, and a first draft for a possible agreement was prepared. Items further to be worked out were: arrangements to be made for road construction and maintenance, water supply, taking care of mining rights possibly to be claimed by third parties, co-ordination of personnel matters, etc. The remainder of Heckmann's stay in Chile served for extending his relations with Chilean authorities.

A fairly detailed report on the Chile mission, compiled by the ESO Directorate was send to the members of the ESO Committee [11]. Attached to this report are copies of letters expressing the interest of the Chilean Ministry of Foreign Affairs, the report of the visit of Heckmann and Oort to the President of the Senate of Chile, and a summary of the comparison of the climatic conditions in South Africa and Chile as discussed at the Summit Meeting on Morado on June 10. Also attached is the text of the Draft Agreement between ESO and AURA drawn up on June 6 and 9, 1963, and an excerpt of the Chilean Law in favour of international enterprises.

Follow-up on the Summit Meeting

A meeting of the EC followed right after the return of the mission in Europe, on July 23 and 24, 1963. It instructed the Director of ESO to approach the

Chilean government concerning the conditions which would have to be fulfilled in order to make it possible for ESO to go to Chile, and negotiations with AURA should be pursued.

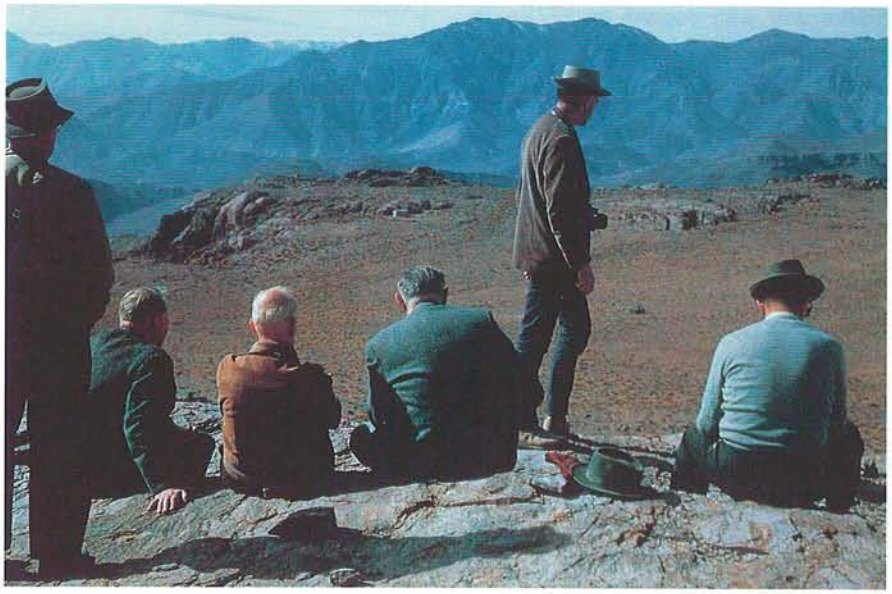
On AURA side, its President F.K. Edmondson had informed the Director of the National Science Foundation (NSF), the sponsoring organization for AURA, on the developing relation with ESO. He received approval of a resolution adopted by the Executive Committee of AURA on June 28 stating that AURA, having dedicated itself to the development of astronomy in the Southern Hemisphere, including observations made by South American astronomers and those from other countries, welcomed "the interest of the European Southern Observatory (ESO) in establishing an observatory in Chile, and in particular on the land which AURA had recently acquired. – – –", and authorized AURA's President to enter into negotiations with ESO. Edmondson communicated this to Oort in a letter of August 20, 1963, which was acknowledged by Oort per letter of August 23 [12]. Immediately following these letters, Heckmann in correspondence with Edmondson sketched a number of first measures to be taken in order that already in 1964 ESO's 1-m Photometric Telescope might be erected on Morado [13].

The talks with AURA were continued on October 11 and 12, 1963, when Heckmann visited Tucson. As in the account of this meeting we perceive divergences of concepts which would eventually lead to separate establishments, I shall report on it in some detail. Participants in the discussions on the part of AURA were its President, F.K. Edmondson; R. Wildt, Chairman of the AURA Scientific Committee; N.U. Mayall, Director of Kitt Peak Observatory; and J. Stock [14].

All present considered close relationship between AURA and ESO mutually advantageous. Central theme was ESO's strong interest in Morado, and immediately connected with this was the question whether ESO might lease or purchase the land. Heckmann rather persistently expressed ESO's strong preference for purchase, a desire that, within ESO, stemmed particularly from the side of the governments. This desire, however, met with considerable reluctance on the part of AURA, a reluctance inspired by the policy of NSF.

In addition to this, there was an element that appeared to be new to AURA: for the agreement to be concluded with Chile, ESO had in mind a contract at government level, in a way an extension of the Convention between the European governments, hence one with the Chilean Ministry of Foreign Affairs. Models were the agreement between CERN and Switzerland and the one between UNESCO and Chile. Exploratory steps toward such an agreement had been taken already during Heckmann's visits to Chilean authorities. For AURA, being an association of universities, the natural base for its relation with Chile was its contract with the University of Chile. Moreover, an important feature of the agreement of the kind envisaged by ESO would be a certain degree of extraterritoriality and associated diplomatic status for its establishment, like that of other international organizations in Chile. The dissymmetry implied by this status as compared to the one of AURA caused reluctance on the part of the latter: associating themselves with ESO with its extraterritorial status might, AURA feared, tend to endanger AURA's relation to Chileans. This status, moreover, would seem hard to reconcile with establishment on grounds leased from AURA. For Heckmann, however, the intended nature of the contract with Chile was virtually beyond discussion.

Still another element entered the discussions, and this one somewhat unex-



June 10, 1963: Summit Meeting on Cerro Morado.
On June 8–10, 1963, ESO officials were the guests of AURA on their property and on June 10 gathered on Morado, discussing ESO prospects in Chile.
Top photograph: *from left to right: N.U. Mayall, H. Siedentopf, Ch. Fehrenbach (in foreground), Sr Marchetti (architect, behind Ch.F.), O. Heckmann, A.B. Muller, F.K. Edmondson.*
Bottom photograph: *from left to right: A.B. Muller, O. Heckmann, J.H. Oort, H. Siedentopf, Ch. Fehrenbach, Sr Marchetti.*
These photographs were kindly made available by Dr. F.K. Edmondson.

pectedly to ESO: the recently developped interest from the part of CARSO in possibly acquiring a share in Morado. CARSO (Carnegie Southern Observatory) aimed at erecting in the Southern Hemisphere the counterpart of the Hale Telescope and had in May 1963 been granted funds for site survey work [15]. Like ESO, it made grateful use of the findings of Stock and associates and it expressed particular interest in Morado. This tended to limit the share ESO might acquire in this site.

The lengthy discussions on October 11 and 12, 1963, left the main problems unsolved. AURA expressed willingness to reserve a temporary site on Tololo to enable ESO to start scientific work at the earliest possible date, and was prepared to recommend to the AURA Executive Committee a long-term (50 years) lease of part of Morado, but it was not prepared to recommend sale; an attitude due at least partly to apprehension with regard to ESO's intended status. In a letter of October 23 to Heckmann, Edmondson confirmed the main points mentioned here and added the offer, to allow provisional installations of ESO on Morado even if ultimately ESO would build its Observatory elsewhere [16]. Informal talks followed on Sunday, October 13, between Heckmann and Wildt who communicated his impressions in a letter to Edmondson of October 16 [17]. Wildt noted that Heckmann, perhaps over-optimistically, might not be fully aware of the amount of further negotiation still required even for reaching the suggested lease. As to the intended status with extraterritoriality, Heckmann promised to submit to AURA the draft-agreement with Chile before it would be signed by either party and he confirmed this in a letter to Edmondson of October 20 [18].

The negotiations between AURA and ESO were resumed early 1964, but at this point I should first describe developments occurring in the intervening months. By the end of October 1963 Heckmann was back in Chile for further negotiations with authorities in Chile, accompanied by Dr. K. Walters, ESO's legal advisor.

During this stay, Heckmann went as far as concluding the basic agreement with the Chilean government: the Convenio [19]. It is an agreement between ESO and the Chilean Ministry of Foreign Affairs and therefore one at the highest possible level. In this respect it is comparable to the ESO Convention. The Convenio was modelled after the agreement between Chile and the Economic Commission for Latin America, CEPAL (an affiliate of the United Nations) which has its Headquarters in Santiago, and it was adapted to ESO's legal status, immunities and exemptions, etc. as they are also recognized in the European context: the ESO Convention. The Chilean Ministry moved so fast and efficiently, that already during Heckmann's stay, on November 6, 1963, the agreement was signed in principle, to become effective upon endorsement by the ESO Council and by the Chilean parliament. (These endorsements took place from ESO's side at the first Council Meeting, February 5–6, 1964, and from Chilean side on April 17, 1964). However, for the EC these rapid developments came as a surprise, and as we shall see, not without embarrassment, for Heckmann had run a bit ahead of things . . . He was back in Europe on November 9, 1963.

Some Data from the Report of the Site Selection Committee,

on the basis of which the Andes Mountains were chosen for the site of the ESO Observatory. (Borrowed from ESO Bulletin No. 1, 1966.)

Number of Clear Night Hours per Year (A clear night defined as one with at least six successive cloudless hours.)

South Africa	*latitude*	*hours*	*Chile*	*latitude*	*hours*
Capetown	– 34°	1470	Santiago	– 33.5°	1675
Rockdale Mt.	– 32.5°	1285	Tololo	– 30°	2300
Boyden Obs.	– 29°	1750	Copiapo	– 27.5°	2760

N.B. Long spells of clear nights more frequent in Chile than in South Africa.

Image Quality

Tololo distinctly better than the South African sites, both with regard to turbulence (measured with Danjon telescope) and image motion (measured with double beam telescope).

Average temperature drop during clear night

Zeekoegat	4.2°	Tololo (Muller and McSharry)	1.3°
Flathill	5.8°	Tololo (Stock)	1.8°

Average Wind Velocity

At Tololo higher than at Rockdale Mt. and much higher than at Flathill and Zeekoegat.

Atmospheric Transparency

For both Rockdale Mt. and Tololo close to expectation for pure Rayleigh scattering; very little dust content.

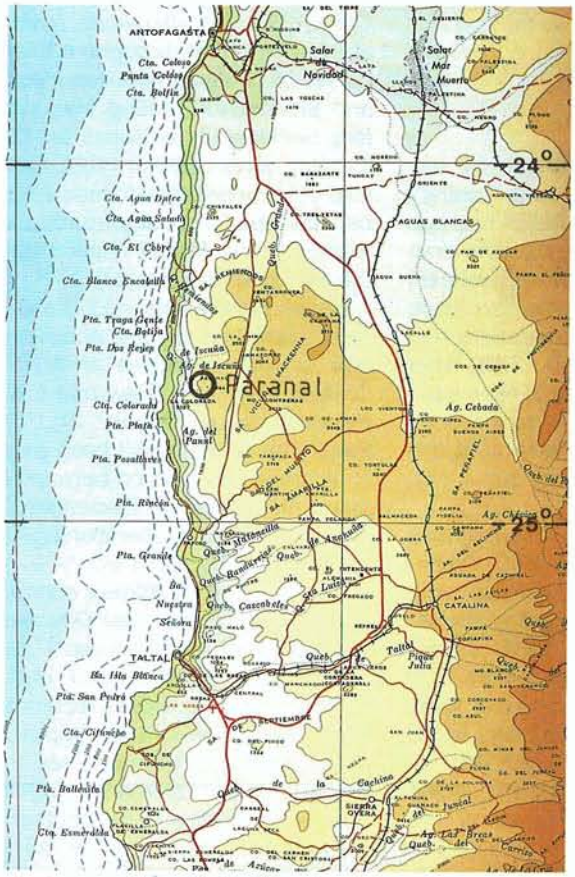
ESO Chooses the Andes Mountains for its Observatory

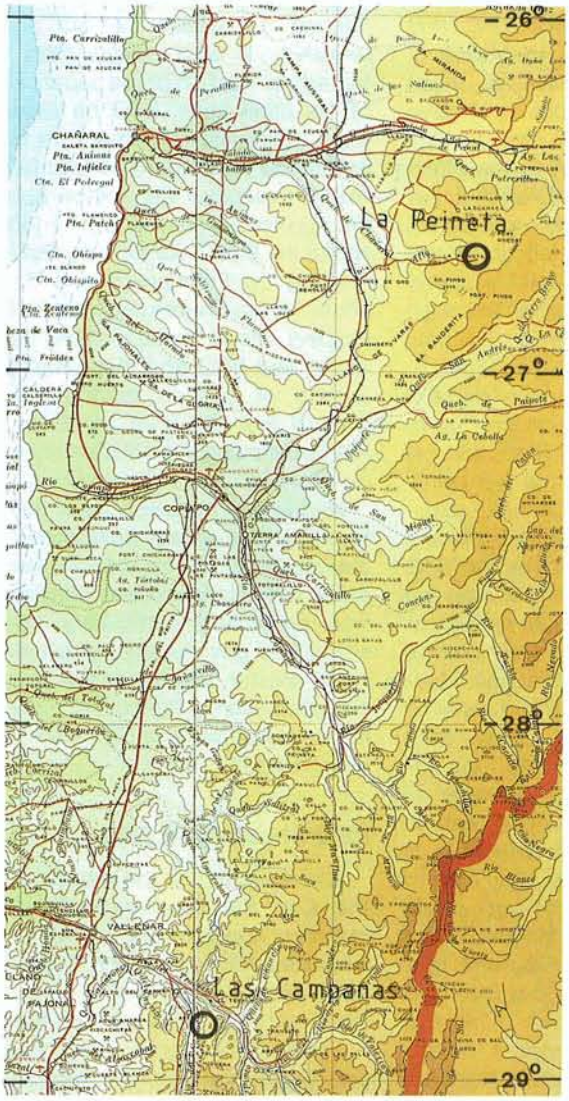
At its meeting on November 15, 1963, the EC first of all considered the basic question of the choice between South Africa and Chile. A report prepared by Siedentopf on behalf of the Site Selection Committee was the basis for the discussions; the Committee had convened on August 6, 1963, at Groningen, and on October 15, 1963, at Tübingen [20]. The report was published in 1966 in the first issue of the ESO Bulletin [21]. In making his comparisons Siedentopf used the data collected at Zeekoegat, Flathill and Rockdale Mt. in South Africa, and those collected for Tololo by Stock and by Muller and McSharry. In the accompanying box we summarize the principal items of Siedentopf's report. Following this presentation and a relatively brief discussion, the EC decided unanimously to choose the Andes Mountains for the site of the ESO Observatory, subject to confirmation by the later "legal" Council. The superiority of the climatic conditions was so impressive an argument, that very little discussion was devoted to financial implications, and to the interesting and challenging prospect of building up relations with a country that in respect to culture and language so far had been much more remote to most of the ESO countries than South Africa had been.

The Convenio with Chile

Proceeding next to Heckmann's account on his visit to Chile, the EC took note with mixed feelings. The Chairman of the provisional Finance Committee, although recommending to the EC approval of the agreement with the Chilean government, reproached Heckmann to have exceeded his authority: the text of the agreement should have been scrutinized and approved by the Provisional Finance Committee and EC prior to signing, and, moreover, the signing should have waited for the completion of the ratifications of the ESO Convention. On the other hand, the EC's Chairman expressed appreciation and admiration for the work done by Heckmann and Walters. The EC then decided to submit the agreement for endorsement at the first Council Meeting following the completion of the ratifications in Europe. (On February 5–6, 1964.)

Heckmann, although showing understanding for the objections from a for-





Maps showing mountains that have played a role in ESO's search for a site. In the earliest stage, for the purpose of comparing measures with ESO's Danjon telescope with those of AURA's double beam telescope, observations were done on La Peineta and Tololo. In a later stage, Morado on the AURA territory appeared to be a likely site for ESO. In the last stage, the choice was narrowed down to Cinchado on the AURA territory, Guatulame near the town Monte Patria, and La Silla. Also marked are CARSO's site Las Campanas, and Paranal in the most northern area which is the subject of current tests.

Useful in preparing this map have been J. M. Ramberg's article in Sterne und Weltraum *of August–September 1964 (in EHA-I.A.2.2.), written right after the explorations of Heckmann et al. in March and April of that year in which La Silla appeared for the first time, as well as a map of the AURA territory in EHA-I.A.2.7., and also the maps in the ESO Annual Report for 1964 and in H. O. Voigt's article on the road construction in ESO Bulletin No. 3 of February 1968. For the maps of Chile, I used the* Atlas de la República De Chile *issued by the Instituto Geográfico Militar, 1970 edition, property of the author.*

mal point of view, must have felt wronged by the reactions in the EC. Let me quote a relevant part of the account in his book *Kosmos, Sterne, Weltmodelle,* written a decade later [22]:

"– – – Mir werden heute noch die heftigsten Bedenken wach, ob damals die Mitsprache bei der Textgestaltung von fünf europäischen Regierungen, mindestens also fünf, wahrscheinlich mehr, Ministerien, überhaupt etwas anderes als einen Zeitverlust von Monaten oder Jahren eingebracht hätte. Die europäischen Mitgliedsstaaten waren der empfangende, Chile war der gebende Teil. – – –".

Anyone who remembers the discouraging struggle within Europe for the ESO Convention, described in my first article, will have understanding for Heckmann's feelings . . .

Heckmann's book throws interesting light on what had made such unexpectedly rapid concluding of the Convenio possible. It was to a considerable extent due to influential persons in his circle of friends and colleagues. In order to appreciate this, one must remember that since long Chile had a strong German component in its population and a stronger tradition of cultural relations with Germany than with other ESO countries. Functionaries of German descent could be encountered at important governmental and cultural posts in Chile, and it was natural for these to sympathetically support the plans submitted by this energetic and highly esteemed scientist from Germany. Two of these should be mentioned here: E. Heilmeier, professor of astronomy at the Universidad Católica in Santiago, and Father Dr. B. Starischka, rector of the German High-School (Liceo Alemán) in Santiago.

It was especially Dr. Starischka who paved the way for Heckmann's approaches to government authorities. His role is not only acknowledged in Heckmann's book, but also appears from an account he recently wrote at the suggestion of Dr. E. Geyer of the Hoher List Observatory and kindly passed on by the latter to me. Several of the ministers in the government of the then President Jorge Allessandri were alumni of Starischka's School, including those of the Interior and of Cultural Affairs and the Minister of "Tierras y Colonisaciones" whose support would be invaluable for the acquisition of the ESO territory. At all these levels, including that of the President (an engineer by schooling) strong sympathy for the project was rapidly aroused. However, Chile was up for new elections by the end of 1964, and a change in the constitution of the government was expected. Heckmann was urged from many sides, including diplomatic ones, to strike while the iron was hot.

The Relation to AURA

Not only the EC was taken by surprise, so was the AURA Board. Contrary to Heckmann's promise, AURA had had no opportunity to comment on the draft text of the Convenio. Disappointment was expressed by AURA's President, Edmondson, in a letter to Heckmann of November 27, 1963 [23]. This letter crossed one of Heckmann of November 29 in which he offered explanations which – at least to the author of this article – do not sound very convincing [24].

The failure to arrive at an arrangement by which the AURA and ESO Observatories would be erected in close proximity caused disappointment at the EC meeting of November 15, 1963, particularly with its Chairman, Oort. On November 17, Oort expressed deep concern about the developments in letters to Edmondson and Mayall [23]. On November 21, the eve of the AURA Executive Committee meeting of November 22 in Tucson, he made a long telephone call to Mayall, with Edmondson and Wildt listening in [24], and followed up with letters to Mayall of November 21 and 22. However, these letters opened no fresh points of view. Meanwhile, this AURA Board meeting had adopted a resolution to the effect that, in view of established AURA policy with regard to Kitt Peak, now to be extended to their Inter-American Observatory in Chile, sale of AURA property should be virtually impossible. Although the resolution did not mention ESO, its implication was clear. In his letter to Oort, Chairman of the EC, of November 26, 1963, in which Edmondson communicates the text of the resolution, he adds *"I hope this resolution will clarify our position to the ESO Council."* [25].

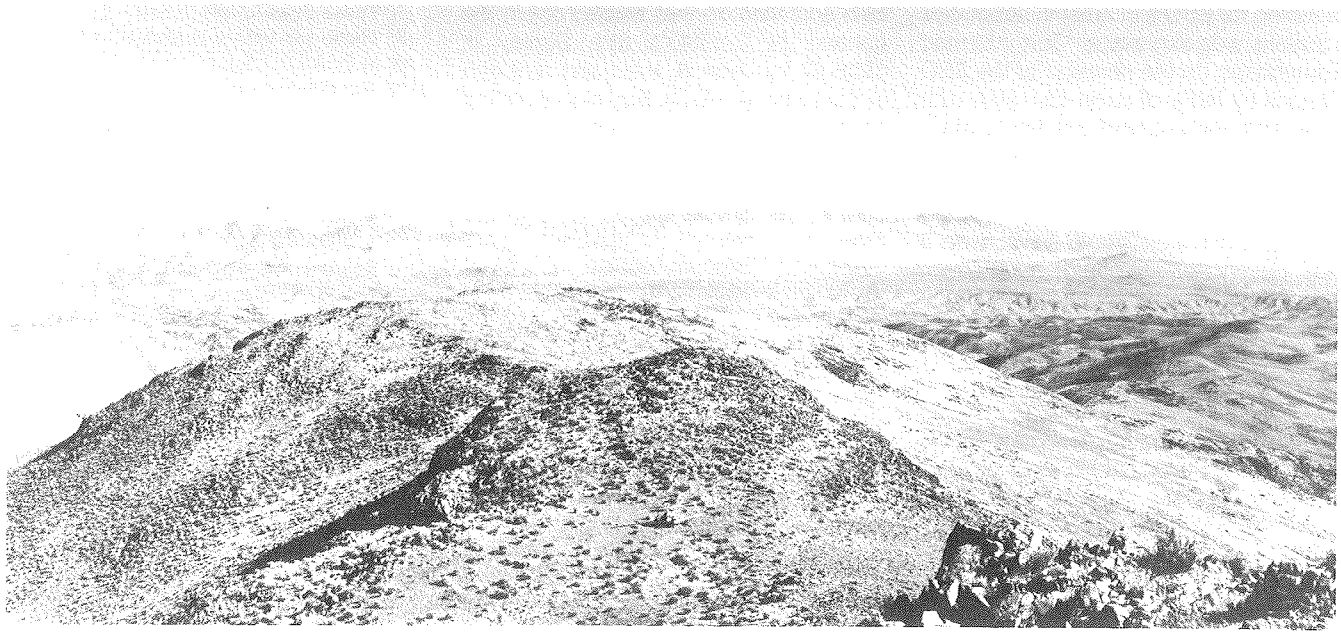
Although some temporary stiffening of the relation between AURA and ESO cannot be denied, nor a shadow on the high expectations of intimate collaboration, a desire remained on the part of both to continue the negotiations. Mayall's letter of November 27 in reply to Oort's letters mentioned before concludes with the statement *"With the obvious goodwill that exists between all parties, I see no reason why we cannot come to an agreement acceptable to all interested parties. For my part, I try to keep foremost in mind the very desirable objective of a close community of astronomers, who would benefit very much by scientific discussions with their neighbouring colleagues. I think this situation is especially important to have in a remote area like that in Northern Chile."* [26]. It is also worth mentioning at this point, that throughout the whole period of contacts between Heckmann and Edmondson, dating from well before Heckmann's activities for ESO till the time of his death in 1983, a relationship of close personal friendship existed between the two, not perturbed by the wrinkle in the formal relation between the two organizations [27].

Negotiations between ESO and AURA were continued on the occasion of a visit of representatives of AURA and CARSO to Europe. They met ESO representatives on January 21, 1964 in Paris. The meeting had been preceded by informal consultation between Heckmann and Mayall in December [28]. It arrived at a draft cooperation agreement between AURA and ESO *"– – – desirous to arrive at an efficient coordination in the exploitation of their Observatories in Chile – – –"* and it agreed – pending approval by AURA Board and ESO Council – on a number of recommendations which essentially implied that AURA would be willing to sell to ESO property on their area south of Morado, possibly extending to the southern border of the AURA domain, including Cinchado but excluding in first instance Pachón (in which CARSO was interested). It also stated that, might Morado or Pachón prove superior to any of the other sites, ESO be allowed to erect its largest instrument on Morado or Pachón on a restricted area [29]. The AURA Executive Committee approved the agreement on January 31 [30], and so did the ESO Council in its first "legal" meeting on February 5 and 6, 1964. Thus, the road remained open for further shaping close collaboration between AURA and ESO and there was a concensus of opinion among the ESO Council that the draft agreement with AURA balanced in a satisfactory manner co-operation and independence.

Meanwhile, however, there had been for some time already an undercurrent in the internal ESO deliberations favouring a still more independent position. This was advocated particularly from the side of the government representatives; such greater independence might be preferred even at the cost of more delay in the operations and higher investment expenses [31].

ESO Chooses La Silla

In preparation for the final decision on the site, the February 1964 Council meeting appointed a working group consisting of Fehrenbach, Rösch (also from France, Rösch had succeeded Siedentopf as Chairman of the committee for the evaluation of the site tests) and Muller, together with Heckmann. Its



First photograph of La Silla, taken from the top in North-Westerly direction, by Heckmann on the occasion of his first landing on La Silla in the company of Fehrenbach and Muller in April 1964. In the foreground the helicopter made available by the Chilean Air Force. Behind the helicopter is the knoll which first carried only the water tanks and now also the New Technology Telescope. Behind this, the ridge on which now most of the telescope park is located. Reproduced from two photographs in the ESO Photographic Archives stored in an envelope marked "Helikopterflug April 1964" in Heckmann's handwriting. From these two photographs, covering the left and right hand part of the view, the ESO Information Service produced this uninterrupted panorama.

assignment was, to have a new look at Cinchado and other sites within the AURA domain as well as in the general vicinity. By letter of February 20, 1964, Oort informed Edmondson about the decision [32]. Heckmann left on March 18 for Chile where Muller joined him and so did, for part of the time, Fehrenbach and Rösch. He returned to Europe at the end of April. During his stay Heckmann reported to Oort in two long letters, of March 30 and April 21 [33].

These two letters are of considerable interest for proper understanding of the developments soon leading to the choice, not of a site within the AURA domain, but of one that came only rather late in the picture. I summarize here the most relevant points.

In the first of these letters, after briefly reporting on his visits to the AURA area and AURA Headquarters in La Serena with Muller and Rösch, including talks to Stock, Heckmann, reflecting on the earlier discussions with Mayall, states that he may have interpreted these erroneously; that once AURA had acquired its extensive property and resolved to invite others like ESO to *"share its luck"*, it must have appeared presumptuous and unnatural to AURA if such parties would approach it about sale of part of this territory, and that AURA's agreeing, in Paris, to such sale was a special concession and by no means a matter of course. However, according to Heckmann, even then a certain restriction on the part of AURA would remain because in several respects, particularly in the context of the construction activities, ESO would necessarily have to adjust itself to AURA rules. Reflecting next on the philosophy of AURA-ESO collaboration, Heckmann wonders what this would amount to in practice: observers at work during the night would have little time to meet, and at Headquarters only few astronomers would be present at any given moment. Sharing costs in practice probably would not really lead to appreciable reduction . . . On the other hand, it should be in such matters as joint observing programmes, joint colloquia and seminars, possibly at the University of Chile in Santiago – not really requiring physical proximity of the Observatories – that collaboration should take shape.

The second letter reports, among other items, on the selection of three mountains which on the basis of inspection by helicopter and by car and aerial photographs were left for further investigation: Guatulame, South-East of Ovalle; Cinchado on AURA territory; and Cinchado-North. The positions of the three are marked on the map. The last one of the three turned out to be the most interesting one from the point of view of accessibility, climatology (dry), proximity of a flat area to be used for a landing strip, and the fact that it was government property and hence probably obtainable without complication. Let me quote some parts of this letter of April 21, 1964:

"Lieber Jan:
Unsere Tätigkeit hier beginnt auszuklingen. Alle werden in dieser Woche wieder nach Europa fliegen. – – – Ich glaube, wir können mit unserer Arbeit zufrieden sein, und hoffentlich ist es der Council auch. – – –
Der interessanteste Berg scheint uns bisher Cinchado-Nord zu sein, ca. 100 km NNO von La Serena, – – – erreichbar von der schnellen Panamericana auf ca. 35 km sehr primitiver Straße. – – – Ohne Dich zu fragen, haben Fehrenbach und ich uns für berechtigt gehalten, Muller zu ermächtigen, auf dem Berg vorläufige Arbeiten zu beginnen. Wir haben Luftbilder bekommen und werden eine Karte herstellen lassen. Zum Council-Meeting werden wir schon mehr wissen. Fehrenbach und ich haben den Eindruck, daß der Berg ein großer Glücksfall ist. – – –".

The name we now use for this mountain: La Silla.

Heckmann reported at the Council meeting of May 26 and 27, 1964. Council resolved to choose La Silla provided reasonable solutions could be found for the provision of water and for the question of the mining rights, and if the price would be acceptable; it accordingly authorized Heckmann to enter negotiations. Naturally, also the relation to AURA was discussed. Heckmann reported on a discussion on Tololo with AURA representatives on April 12, and on a later discussion between Fehrenbach and Mayall, in which full under-

standing for ESO's interest in alternative solutions was expressed. Oort informed Edmondson on the decision of the ESO Council by letter of June 12, 1964, with copy and accompanying letter to Mayall. From the last one I quote: *"– – – Personally I am disappointed that this decision will make our relations in Chile less intimate than they would have been if our observatories could have been erected on Morado, as had been provisionally planned during our beautiful common trip, last year. But, considering the circumstances as they have gradually developed, I believe that the course we have now decided on, may be the best. – – –".* Mayall, in his reply of June 20, expressed the same feelings. From Edmondson's reply of July 7, let me quote: *"– – – I see no reason why there should not be frequent contact between ESO and AURA astronomers, even though ESO locates outside of the AURA domain. I am sure that such contacts will develop in a very natural way. – – –"* [34].

As we know now, the conditions imposed by Council were satisfactorily met by Heckmann's subsequent negotiations, and so the decision of the Council meeting on May 26, 1964, did imply the final choice for ESO's site: La Silla.

With many suitable mountains in the Andes around La Serena, how had the working group arrived at narrowing down the choice to La Silla and Guatulame, besides Cinchado Sur on the AURA property? The basic idea, as described by Heckmann [35] was, to look first of all for government property, as this would facilitate the negotiations for purchasing, especially in view of the recently concluded Convenio. Rösch, according to Heckmann, managed to borrow from the Ministerio de Tierras y Colonisación a unique atlas, scale 1 : 200,000 of all government property. From it they selected the two new sites and they obtained further information on water sources and mining activity from maps of the Instituto de Investigaciones Geológicas. Closer inspection of the sites was done by means of a helicopter put at their disposal by the Chilean Air Force.

Reviewing these developments, the reader may be surprised by the absence of a thorough test of La Silla before it was adopted by ESO. André Muller reminds me of the conviction established at that time by Stock's tests: almost any mountain top in the La Serena area at the level 2000 to 3000 metres, well isolated from the surrounding peaks, should be adequate. The almost universal property of the near-absence of temperature drop during the night on these mountain tops virtually guarantees good seeing quality.

A comparison of seeing between La Silla and Morado was carried out in the context of CARSO's Site Survey in 1966/67 by John B. Irwin and reported in ESO Bulletin No. 3. Equality of seeing conditions on the two sites, confirming the above expectation, is implicit in Irwin's Table 1. Explicit is John's praise of ESO's *"meals that are the envy of the Morado observers".*

Acknowledgement

It is a pleasure to acknowledge many helpful comments I received from Dr. F.K. Edmondson, former President of the AURA Board.

References and Notes

Note: for a list of the ESO Committee meetings see the Table in article I.

Abbreviations used:

EC = ESO Committee, the committee that preceded the Council.

EHA = ESO Historical Archives (see the article in the *Messenger* of December 1989).

FHA = Files Head of Administration at ESO Headquarters.

Heckmann Sterne = O. Heckmann, *Sterne, Kosmos, Weltmodelle,* Verlag Piper & Co., München–Zürich, 1976.

[1] See, for instance, Kuiper's report in *Lunar and Planetary Laboratory Communication* No. 156 of October 1970 in EHA-I.C.2.7.b.

[2] A copy of these reports is kept in EHA-I.C.5.

[3] See accounts by Stock in *Chile Site Survey Technical Report* No. 2, Kitt Peak Nat. Obs., 1963 in EHA-I.C.2.7.b., and in *Information Bulletin Southern Hemisphere,* No. 7 Oct. 1965, Ed. J. Sahade.

[4] I am indebted to Dr. F.K. Edmondson for informing me about these developments.

[5] See Addendum C to the Minutes of the 2nd EC meeting of January 1954.

[6] See page 5 of Stock's Report mentioned in Note [3].

[7] These three letters in EHA-I.C.1.1.c.

[8] These two letters in EHA-I.C.1.5.b.

[9] In EHA-I.C.1.5.c.

[10] The detailed report is in EHA-I.A.2.7.

[11] In EHA-I.A.2.7., see also reports in EHA-I.C.1.5.f.

[12] These two letters in EHA-I.A.2.8.

[13] See EHA-I.A.2.8. for letters OH to FKE of August 26 and FKE to OH of September 3, 1963.

[14] See minutes of the discussion in EHA-I.A.2.8.

[15] See, for instance, G.W. Preston's account "That Special Mountain", Carnegie Inst. of Washington, May 1986.

[16] EHA-I.A.2.8.

[17] Communicated by F.K.E. to the author.

[18] In EHA-I.A.2.8.

[19] The full title reads: Convenio entre el Gobierno de Chile y la Organización Europea para la Investigación Astronómica del Hemisferio Austral, para el Establecimiento de un Observatorio Astronómico en Chile. See the volume *ESO Basic Texts.*

[20] For reports on these meetings see EHA-I.C.2.7.a.

[21] H. Siedentopf, Comparison between South Africa and Chile. *ESO Bulletin* No. 1, p. 11, 1966.

[22] Heckmann Sterne, p. 288.

[23] In EHA-I.A.2.8.

[24] See notes by Oort and the telephone bill in EHA-I.A.2.8.

[25] In EHA-I.A.2.8. and I.C.1.5.e.

[26] EHA-I.A.2.8.

[27] Communication by F.K. Edmondson to the author.

[28] See EHA-I.A.1.22.

[29] See EHA-I.A.2.8. as well as the minutes of the meeting prepared by AURA, in EHA-C.1.5.e.

[30] See the letter of February 2, 1964 of Edmondson to Heckmann in EHA-I.A.2.8.

[31] See, for instance, the minutes of the informal EC meeting on 20 January 1964, Council Doc no. 20 in FHA.

[32] EHA-I.A.2.8.

[33] EHA-I.A.2.10.

[34] All four letters in EHA-I.A.2.8.

[35] Heckmann Sterne, p. 290ff.

New ESO Scientific Preprints

March–May 1989

636. L.K. Kristensen and R.M. West: On the Lost Minor Planet (719) Albert. *Astronomy and Astrophysics.*

637. P.A. Shaver and M. Pierre: Large-scale Anisotropy in the Sky Distribution of Extragalactic Radio Sources. *Astronomy and Astrophysics.*

638. R. Buonanno and G. Iannicola: Stellar Photometry with Big Pixels. *Publications of the Astronomical Society of the Pacific.*

639. E. Brocato et al.: Synthetic Colours and the Chemical Evolution of Elliptical Galaxies. *Astrophysical Journal.*

640. M.-H. Ulrich: The Host Galaxy of BL Lac Objects or What's in a Name? To be published in the proceedings of the workshop: "BL Lac Objects, 10 Years Later", Como, Sept. 1988.

641. L. Binette et al.: Relation between the Ionizing Continuum and the Emission lines in Fairall 9. *Astrophysical Journal.*

642. M. Marcelin et al.: Kinematics of the Jet of the Crab Nebula. *Astronomy and Astrophysics.*

643. J. Barbero et al.: The Age Calibration of Integrated UV Colours and Young Stellar Clusters in the Large Magellanic