Figure 6: *These are the typical rocks found on the Paranal summit; the black "Gabbro", the green "Andesite", the pinkish "Granodiorite", the green-blue copper minerals, two samples of "salt"-enriched rocks (white), a metamorphic rock with fern-like deposits of magnesium and in the centre a green-gray rock containing "Olivine" crystals.*

liquid but then evolved in different temperature, pressure and chemical environments.

Clays are occasionally found. As previously explained they originate from the alteration of the felspars contained in the rocks.

There are a few particular minerals. Such as chlorides or sulphides. Salts that were deposited in recent times by weathering effects. There are also some "rare" minerals such as Copper and Olivine. Copper is found associated to different chemical complexes and three types are found here; Atacamita, Crisocola and Calco-pyrite. These deposits are related to hydrothermal fluids, minerally charged, that circulated in present faults. Olivine on the contrary is of high temperature and pressure context and so of great depth. The rock containing such a mineral was probably brought up from deeper rock layers.

If we enlarge our scale of analysis, the geology of the area appears more complex. As we can see in the geological map (Fig. 8), sedimentary deposits (marine sediments of calcareous type), sandstones (marine or lake deposits of silicium type), intrusive rocks (typically a Granite) or mylonites (a metamorphic rock) have been found. This conglomeration of so many different types of rock, formation wise, is due to the geodynamic phenomena of the zone. The upheaval of the Andes has put into contact and intricately mixed all types of rocks. Faults and kilometre long movements have displaced blocks or enabled material from the earth's core to rise. Heating has transformed material. Friction and fracturing linked to tectonic movements affected the entire land.

Intellectual Interest and Practical Applications

Studying the geology of Paranal gives us a new vision of the site. One can really be awed by the history of the modelling of this land. But beyond the intellectual interest, this knowledge is useful. Understanding the geology of Paranal is necessary to plan the construction of the VLT. Soil mechanic studies, seismic hazard estimates, water use programmes or researches for construction materials rely fully on the correct understanding of the site's geologic or geotechnic characteristics. Knowing about the rock composition is helpful when searching for adequate sands or gravels for concrete. Understanding the recent geo-climatic environment can orientate the water supply programme. Estimating the seismic hazard risk, by statistical studies of occurred events or by monitoring seismic tremors, enables the structural design of the buildings. Testing the geotechnical quality of the Gabbros, Andesites, Granodiorites or the surface material, gives indications as to where to install and how to design the buildings' foundations. This in accordance to the resistance and stability of the terrain in such a seismic prone zone. In all, the geological understanding of the place is of vital interest. Particularly if we consider that the biggest telescope ever is being built here!

Tentative Time-table of Council Sessions and Committee Meetings in 1992

May 4–5	Users Committee
May 11–12	Scientific Technical Committee
May 25–26	Finance Committee
June 2–3	Observing Programmes Committee, Amsterdam
June 4–5	Council
November 12–13	Scientific Technical Committee
November 16–17	Finance Committee
November 26–27	Observing Programmes Committee
December 1–2	Council

All meetings will take place in Garching unless stated otherwise.

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References

Dercourt J. and Paquet J., 1985, *Géologie, Objets et Méthodes*, Dunod ed., Paris.

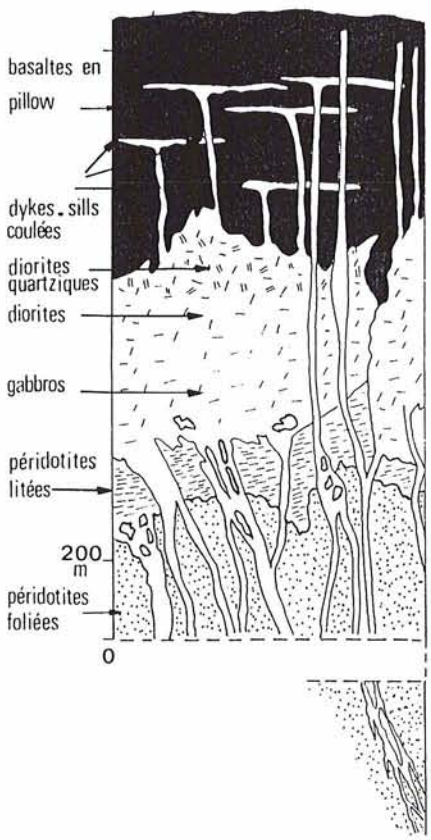

Figure 7: *Model of association of basic to ultra-basic rock occurring supposedly below the sea floor. (J. Dercourt, J. Paquet, 1985).*