Paranal Union, the La Silla Union and the group of non-unionised Local Staff Members. A single three-year agreement was concluded with all sides happy with the outcome. He also initiated a drive to raise external funding for non-core ESO business. This led to the donation, by the Klaus Tschira Foundation, of the building for the ESO Supernova Planetarium & Visitor Centre, due to open in April 2018.

Patrick was also instrumental in convincing the Finance Committee and ESO Council to fund the expansion of the programme required by the Extremely Large Telescope (ELT). This meant developing the unusual funding model and helping to convince Brazil to sign the Accession Agreement with ESO. Alongside this, Patrick's other achievements included streamlining ESO spending, staying on budget with construction of the Atacama Large Millimeter/submillimeter Array (ALMA), establishing the tools for medium and short term borrowing, hedging of the Chilean Peso, working on the Polish accession and, last but not least, securing the Strategic Partnership with Australia (see Comendador-Frutos, de Zeeuw & Geeraert, p. 2).

Patrick left ESO at the end of August to return to CERN. Farewell parties were held in Chile and Garching in August and Figure 1 shows a photograph from the one held at the ESO Vitacura premises in Santiago. We wish Patrick every success "back home" at CERN.

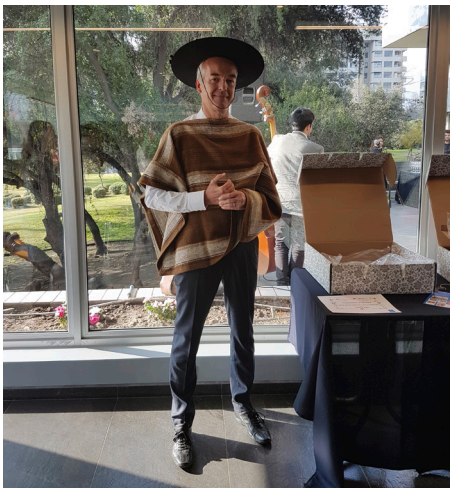

Figure 1. Patrick Geeraert being fêted at his farewell party in Chile.

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Jerry Nelson — An Appreciation of his Pioneering Telescope Work

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Jerry Nelson, the intellectual, technical and spiritual father of the Keck telescope project passed away in Santa Cruz on 10 June 2017. The telescope world has lost one of its true masters. At the 4th conference on Large Telescopes held at ESO in Geneva in 1977, Jerry presented the work of astronomers at the University of California who had "looked seriously at the possibility of constructing a large, 10-metre-class, optical telescope […] which would match superlative seeing" with "modern area detectors (CCD arrays, photographic emulsion)". Although in 1977 Jerry was leaving open the possibility that the primary might be monolithic, it is clear in that publication that segmentation was the solution that he considered best. Jerry was at least two decades ahead of the field.

The cost of a telescope is largely connected to its kinematic volume and its weight, driven by the mass needed to support the optics. Heavier optics implied more expensive telescopes. Telescope mirrors have to keep their shape and relative positions if the instruments are to receive an acceptably sharp focal plane. The stiffness of the optics is related to their thickness-to-diameter ratio; the 4-metre-class mirrors in the late 1970s were monsters, expensive, difficult to produce and slow to reach thermal equilibrium. Either a thin meniscus or a sandwich would be needed to increase the aperture using a monolithic mirror. Segmentation of the primary mirror results in stiffness of the local optical surface, while the overall shape is determined by the control system, at a much more manageable weight budget. As for kinematic volume, containing the length of the telescope — hence the size of its dome — drives the system design towards a fast primary mirror.

Figuring off-axis aspheres and cutting them to hexagonal shape is a daunting challenge. The steeper the primary mirror, the more difficult this task becomes. Everything had to be developed and Jerry was at the heart of all of these efforts. With Jacob Lubliner, Jerry developed stress mirror polishing, converting the problem from an aspherical one to one of spheres. Jerry was active in the development of the edge sensors that measured the positions of the mirrors with nanometric precision and the actuators that moved the mirrors with similar precision. All of this was done without the power of the tools that we now have at hand and without the prior knowledge that it can be made to work.

Philippe Dierickx

Jerry Nelson seen through an uncoated mirror segment of the Keck Telescope in 1994.

Jerry's plethora of TMT (Ten Meter Telescope, before it became Keck) technical notes, in areas ranging from optics, mechanics, electronics and control are a treasure trove for all telescope builders. Jerry had a long collaboration with Terry Mast and Gary Chanan as well as with the large and dedicated team of engineers and scientists who made Keck the success that it has undoubtedly been. In addition to the many honours that the astronomical community bestowed upon him, Jerry shared the Kavli prize in astrophysics (with Roger Angel and Ray Wilson) and was awarded the Benjamin Franklin Medal in Electrical Engineering, the André Lallemande Prize of the French Academy of Sciences, and the Dannie Heineman Prize for Astrophysics of the American Astronomical Society.

Jerry followed his Keck success by leading the adaptive optics efforts at the University of California and being the project scientist for the 30-metre CELT (California Extremely Large Telescope, later merged with the Very Large Optical Telescope [VLOT] and the Giant Segmented Mirror Telescope [GSMT] into his second TMT — the Thirty Meter Telescope).

As ESO proceeds with the construction of its 39-metre segmented mirror telescope, we acknowledge an enormous debt of gratitude to Jerry for the transformational success of his endeavours, and for giving astronomy a path to ever bigger telescopes.

Jerry was gifted with insatiable curiosity, armed with a beautiful mind, and endowed with endless enthusiasm. The telescope world will sorely miss his leadership and his willingness to help and advise, as well as his perennial smile.

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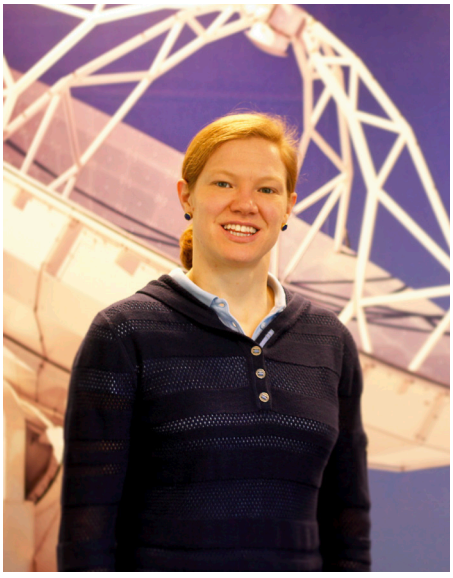
Fellows at ESO

Adele Plunkett

My story does not begin with "Since I was a child, I looked at the sky and wanted to be an astronomer." Instead, when I was a child growing up in Texas (USA), I was looking in a million directions and I had no idea what I wanted to be when I grew up. Admittedly, I still don't know. When I was a child, I knew that I liked maths and science. I also liked languages and travelling. I didn't know how I could fit these "likes" together, but I've found that the coincidences of life bring them together naturally.

My journey to become an astronomer has made several stops in Chile, from where I write this piece today nearly 10 years after I first heard about it in 2008. In 2008, during the third year of my physics undergraduate programme, I spent seven months as an exchange student in La Serena, in the *norte chico* (small north) of Chile. I enrolled in the Universidad de La Serena, with three diverse courses on archaeo-astronomy, electrical circuits, and Chilean economics. I did not know that Chile hosted some of the most important telescopes in the world, but I soon learned as I participated in an undergraduate research programme hosted at the Cerro Tololo Inter-American Observatory (CTIO) and funded by the US National Science Foundation.

My first astronomy research project at CTIO studied chemical abundances of Pleiades stars, with Simon Schuler. I was fascinated when someone pointed out the Pleiades cluster that I could see with my naked eye one night, and the next day I was analysing spectra of those stars on the computer. The same semester, I



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