Mem. S.A.It. Vol. 88, 506

Memorie della

Francesco's memories

G. Melnick[1] and T. Montmerle[2]

[1] Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, USA, e-mail: gmelnick@cfa.harvard.edu
[2] Institut d'Astrophysique de Paris - 98bis, Bd Arago, 75014 Paris, France
e-mail: montmerle@iap.fr

Abstract. Episodes of Francesco's life narrated by two of his best friends and colleagues.

Francesco: a personal reflection (by Gary Melnick)

Francesco and I met 37 years ago at Cornell University. I would be less than honest if I said we clicked as friends instantly. Rather, Francesco's was just another pleasant, but unfamiliar, face in the small army of bright young students Franco Pacini brought to Ithaca to collaborate with Ed Salpeter. At that time, in 1980, I was in a selfimposed exile working to complete my thesis, so I had little time to do anything more than just smile and nod when we passed in the corridor.

Things changed in August of 1983. Francesco and I, along with several others in attendance today, participated in the NATO Advanced Study Institute meeting on the "The Birth and Infancy of Stars" held in Les Houches, France. During the first 3 weeks of the 4-week workshop, Francesco and I chatted from time to time, having recognized each other from our Cornell days. During coffee breaks he would comment on something that would make me laugh, or I would say something that would make him laugh. By week 4, we succumbed to a universal law of friendship – like gravity, laughter is an attracting force and by the last week of the workshop we actively sought out each other's company during meals and breaks. Francesco asked if I'd like to join him on his return to Italy. As I had never been to Italy, I accepted. In addition to his great sense of humor, I also discovered his abundant generosity and kindness.

Over the course of his many trips to Cambridge to work with Steve – during which he often stayed with me for months at a time – and trips together with Sylvie in California, Hawaii, Paris, and Boston, joint return visits to Ithaca, travels through Japan, and my many visits to Arcetri, Francesco and I cemented our friendship. Distance was no obstacle. If our face-to-face get-togethers were the bricks of our friendship, then emails were the mortar… thousands of emails over the years, the last exchange occurring on the day he passed away. Remarkably, even though we worked in closely aligned fields – he in star formation, me in astrochemistry – with few exceptions, our email exchanges concerned family, current events, and just day-to-day life, always, always with a light-hearted humorous twist. We just loved to make each other laugh.

All of the above is just a preamble to what I really want to say, which is for Sylvie, Barbara, and Arianne. He loved you immensely – this was abundantly evident in his writings. His pride in his daughters was beyond words.

On April 27, 2010, Francesco emailed me with the Subject line "Sad news" informing me of his father's passing. In this email, Francesco writes: "Although you met my father many years ago, I'd like to share with you some thoughts about him. In a few words, he was serious (unlike one of his sons), correct in his private and job affairs, and with a great sense of responsibility." The apple didn't fall far from the tree.

As far as I'm concerned, Francesco's hard work and endless striving for excellence were *acquired* traits. The gentleness, expansive curiosity, quiet caring, love, pride, and wonderful humor *was* Francesco. I'm sure this is how you'll remember your husband and father, as will his many friends and colleagues here today. As for me, I miss him like a brother.

A French-Italian decade in Francesco's life: 1992-2002 (by Thierry Montmerle)

Francesco Palla contributed to a remarkably large spectrum of topics in astrophysics, mostly as a theorist, but always concerned with astronomical observations both as a challenge to develop new theories, and as tests of existing ones -his or others. Altogether, the common background for his research was the question of the origins: origins of stars and planets in our galaxy, origin of stars in galaxies and in the early universe, origin of the elements, etc.

But for me his major contribution was in the field of the formation and early evolution of low-mass stars, either in isolation (as in the Taurus clouds), or in clusters and associations (like in the Orion nebula). In the early nineties, he (and Steve Stahler) developed a new theory for star formation, in the low-mass ($< 2M_\odot$) range applicable to T Tauri stars (and the inflow-outflow role of their envelopes, disks and jets, which had been discovered shortly before via their infrared excess signature), and in the intermediate-mass range ($2 - 8M_\odot$) applicable to Herbig Ae-Be stars (more or less similar to T Tauri stars, but with a more difficult interpretation of inflow-outflow signatures).

Yet an important component was not taken into account by Francesco and Steve: the role of magnetic fields. Their existence in T Tauri stars, interpreted as solar-like (surface) magnetic activity, had been revealed in the early eighties by X-ray satellite observations, first by NASA's *Einstein* (and to a lesser degree by ESA's *EXOSAT*), then by Germany's *ROSAT*, launched in the early nineties, all observations in which I was deeply involved after my discovery of the "ρ Oph X-ray Christmas Tree" (i.e., X-ray flaring T Tauri stars in the ρ Oph molecular cloud) by *Einstein* (1979). Since Francesco was already a major figure in the field of star formation, and given other connections I had with Italian astronomers at the time, it was quite natural that we came into contact, and this is how a long and fruitful "French-Italian collaboration" started between my institute in the Saclay Center for Nuclear Studies, and Francesco's institute at Arcetri Observatory in Florence.

Since both of us had a small group of students and collaborators, the idea came that we should all meet together and share our knowledge in a "neutral", non-institutional place. I proposed to organize a week-long workshop, due to take place in September 1992 in a remote, small island in which I happened to have a summer house: the Ile d'Yeu (Yeu Island). It is located in the Atlantic Ocean, 17 km from the coast of Vendée, reachable by train to Nantes, then by bus and a 45-mn crossing by a tide-dependent ferry, and where cycling is the dominant mean of transport. Quite an adventure – we were sure not to be disturbed by crowd or traffic! The meeting gathered 15 participants, distributed about equally between Saclay and Arcetri. In fact, most junior participants are now well-known in astronomy and remember vividly their cycling and swimming sessions around beaches between courses! Francesco gave a brilliant introduction on star formation (see Fig. 1), and clearly – albeit in all modesty – demonstrated to be a key actor in the field. In passing I must also pay tribute to Antonella Natta, another key participant (who didn't cycle!) for her contribution in the then new field of accretion disks.

Fig. 1. First French-Italian meeting on Star Formation: Francesco's introductory lecture. The workshop was held in the City Council meeting room of Ile d'Yeu (France) in September 1992: no PowerPoint then!

This workshop triggered a series of joint meetings between Saclay and Arcetri, organized by either institute about every two years, and in which Francesco took a major role: Florence (1994), Gif-sur-Yvette (1996), Ponza (another island, offshore the Napolitan coast, 1999), and opened more broadly in 2000, when a large international meeting on star formation was organized as a Euroconference on "Stellar Clusters and Associations" at the famous "Institut d'Etudes Scientifiques de Cargèse" – in Corsica, a third island... (There I discovered that Francesco spoke fluent Corsican !) This was followed by yet another meeting in 2002 -this time gathering almost 200 participants in the ski resort of Les Arcs (Savoie, France), in the framework of the "Rencontres de Moriond", on the theme of "Star Formation in our Galaxy and Other Galaxies", in which Francesco again appeared as a leader in the field. That was the year in which he published with Steve Stahler their seminal ApJ paper "Star Formation in Space and Time" – the title of the present memorial conference.

Of course, other meetings and developments followed, but to me this period was particularly fruitful and bore in many ways the seeds of our current knowledge on star formation. Always available, always full of enthusiasm, always rich of challenging ideas, yet always modest and ready to listen, Francesco left not only a strong scientific impact in astronomy, but also on the whole community. He was a humanist, and we sorely regret not to have the chance of benefitting from him in the coming decades.