



Charlene Heisler
(1961–1999)

Charlene Heisler was a very special person who touched the lives of all those around her in a very deep way. Although her life was not very long, she had far more influence on those around her than most people attain in a full lifetime.

When Charlene Heisler was about to embark on her PhD in astronomy, her doctor advised her that since she had cystic fibrosis—an incurable disease—and was unlikely to survive for more than a couple of years, she should abandon any thoughts of doing a PhD and should instead go out and have some fun. Well, Charlene did go out and have fun—she did her PhD! For her, what could be more fun than the excitement of probing the cores of galaxies and uncovering the secrets of the Universe? Her sense of fun propelled her right through her PhD, which she survived despite the doctors' warnings, and then through a further eight years during which she built a distinguished career as an internationally-renowned astronomer working at some of the world's top observatories.

In her scientific output, Charlene has contributed enormously to our understanding of active galaxies and to why some galaxies have broad-line regions and others don't. But her greatest gift to astronomy was something even rarer than that—her ability to inspire and motivate those around her. Her sheer enjoyment and excitement of astronomy livened up many a long night at the telescope and turned many a boring meeting into a stimulating experience.

She was particularly inspiring as a role model to young female students hesitating on the doorstep of the male-dominated bastions of astronomy. Charlene recounted the tale of when, as a young undergraduate, she had gone into her first physics class at Calgary to find that she was the only female in the room. Coolly, she took her accustomed place in the front row. The professor, seeing this pretty little thing in the front row who had obviously wandered into the wrong lecture, came up to her and said 'Ahem, young lady, this is the physics class'. Charlene froze him with a glare and said, 'Yes, thank you,

I know that', and left him bumbling in confusion and embarrassment.

Thankfully, those days of blatant chauvinism have receded, and yet it is still difficult for a female to make it in the 'hard' sciences. Charlene would not bow to those dark forces of chauvinism that still lurk in some corners of our institutions, nor would she adopt the outdated stereotypes that some felt were demanded of a woman in science. Instead, the only role that she ever played was that of herself. She projected her own feelings and beliefs with passion and forcefulness, but above all she projected her sense of fun and vitality. To her, astronomy was fun, and not only fun but also worthwhile, so what better could one do with one's life than that?

After taking her Honours degree at Calgary in 1985, she did her PhD at Yale under the supervision of Patricia Vader. In her PhD thesis, Charlene investigated the properties of galaxies whose spectral energy distributions peaked near 60 microns. These galaxies soon became known informally but internationally as 'Charlene's Peakers'. These Peakers were strong emission line galaxies with spectroscopic types ranging from starburst to Seyfert, with centrally concentrated H-alpha and radio continuum emission. The central core of her studies was to see what was driving these Peakers, and she concluded in her thesis, and in several papers resulting from it, that the Peakers represented a short-lived phase of nuclear activity, triggered by an interaction.

I first met Charlene at a conference in Santa Cruz in 1988, where she presented her Peaker work. Although she had not yet finished her PhD, she already made a strong impression on the attendees with her lively up-beat style, and her obvious enthusiasm for her subject. Her work overlapped with mine, and so we briefly discussed these galaxies at that meeting. We subsequently ran into each other at various conferences in different parts of globe over the next few years, and our common professional interest gradually turned into a friendship. Eventually, many years later, we became close friends and colleagues.

She finished her PhD in 1991, and took up a postdoctoral position with Mike de Robertis at York University, in which she continued her studies of her beloved Peakers, as well as starting to branch out into other areas.

In 1993 Charlene took up a postdoc position at the Anglo-Australian Observatory, and moved to Sydney, Australia, accompanied by her husband, Doug, who selflessly put his legal career in Canada on hold. As well as her continuing studies of her Peaker galaxies, she became one of the support astronomers for IRIS and prime CCD imaging, and became the AAO liaison astronomer with the MPI 3D project. What might have been a chore for others was seized

enthusiastically as an opportunity by Charlene, as a result of which she started several collaborations in other, unconnected, areas of astronomy. In 1996 she moved to Mount Stromlo Observatory, Canberra, and in 1998 she was awarded a prestigious Senior Fellowship there.

In 1997 she addressed (with Stuart Lumsden and Jeremy Bailey) her second major area of work, after her Peakers, in what was perhaps her most significant paper. This paper tackled the question of why some Seyfert 2 galaxies have 'hidden' broad line regions (HBLR), visible only in polarised light, and others don't. Charlene and her colleagues showed that there is a strong correlation between the existence of a broad line region and the infrared colour and extinction of the galaxy. They then developed a model, consistent with the 'Unified model', in which Seyfert 2's with hidden HBLR's were simply those Seyfert galaxies whose symmetry axis was relatively close to the line of sight.

Her last major project started as a result of an animated late-night discussion between Charlene, Phil Appleton, and myself, over whether there was any real evidence to associate AGN activity with starburst activity. This became the COLA (COmpact Low-power AGN) project. That heated discussion became one of many over the next couple of years, as we thrashed out the issues and worked out the selection effects and how to overcome them. One of Charlene's greatest assets in these discussions was her intellectual honesty. When one of us had become entranced by an idea of how to solve the problem, and was building up momentum to run with it, perhaps a little too uncritically and enthusiastically, Charlene would suddenly ask the hard question. Will it work? Do we have enough resolution? Do we have enough objects in our sample to give a statistically significant result? It was through such hard-hitting discussions that the project became honed and refined, and eventually took shape. It was just after one of our visits to Chile to take observations for this project that Charlene's illness took a turn for the worse. This was her last observing trip. However, her pivotal contributions to the COLA project still live on, and are still bearing fruit, and a number of papers bearing her name are yet to be published.

Perhaps even more significant than her contributions to science was Charlene's effect on other people. There are a number of young people in science now who would not be there were it not for Charlene's encouragement and guidance. Charlene's first PhD student was Tanya Hill, who is now herself an active force in Australian science communication, and her second was Lisa Kewley, who is now exploring the boundaries between AGN and non-AGN galaxies. To these students and others, Charlene was not just a teacher and mentor, and not at all an authority

figure, but she was instead a friend and companion. As one student commented: ‘she was a wonderful friend, a big sister and an incredible inspiration’. In short, she was one of the best role models that a young student could have, and astronomy is much poorer for her passing.

But perhaps that is too negative a view. While it is undoubtedly true that the world is a duller place since Charlene left, we should instead reflect that it is a much richer place than if Charlene had never lived—not just for her students, and other young people she inspired, but also for her professional colleagues. Charlene inspired many of us to do our science better, and at the same time not to lose sight of our inner human selves. Charlene showed us how our relationships with our professional colleagues don’t have to be the sterile, formal, caricatures that many feel are demanded in a professional relationship. She showed us that it is possible to do good science, and have fun, and be warm, sincere, human beings—and all at the same time. For that, and for many other things, we will be forever grateful that Charlene entered our lives.

Sadly, despite her indomitable willpower, her disease started taking the upper hand in late 1998. She received a lung transplant in early 1999, which at first looked a success. Two days after the transplant she was on an exercise bike. A few days later she was taking ARC proposals to her hospital bed for refereeing, and a little later was concerned about the summer-student selection that she was supposed to be organising. Within a few weeks of the transplant, she started analysing data from our last spectroscopy run. Most people would take it easy after such an operation, but for Charlene,

astronomy was everything, and she was determined to keep going. But, after such a transplant, which we all knew statistically had only a 50% success rate, the narrow path between rejection and infection is strewn with obstacles, and despite an excellent prognosis and all signs of a first-class recovery, in late October she suddenly deteriorated and on 28 October 1999 she passed away.

I’ve been amazed by the number of people from all over the Australian and international astronomical community who have been deeply and genuinely distressed and shocked by Charlene’s passing. She obviously made an enormous impact on all the people around her. She really was a very exceptional person, and we’re all very lucky to have known her. I keep on thinking back to something she once said, to the effect that the doctors didn’t really expect her to live beyond her eighteenth birthday, so everything beyond that was a bonus, and she intended to make the most of it. Well, she certainly did that! And in the process she had an amazing effect on everyone around her—infusing everyone with her vitality and enthusiasm. Many of her colleagues found her vivacious and energetic approach to science spurred them on when their enthusiasm might otherwise have been flagging. It’s quite overwhelming to appreciate the enormous effect she had on people around her.

Charlene enriched our lives so much. We loved her dearly and she will always be part of us. Thank you, Charlene.

Ray Norris
December 1999

Footnote: A few of us have got together to set up a ‘Charlene Heisler Prize’ to commemorate her memory, and to celebrate all the wonderful things she did, and in particular the way she managed to inspire and motivate young people. Many people have already contributed generously and overwhelmingly. Such amazing generosity is a real tribute to the impact Charlene made on all of our lives. If you would like to contribute, details are at

<http://www.atnf.csiro.au/~rnnorris/charlene>

Photo supplied courtesy of Professor M. Dopita, Research School of Astronomy & Astrophysics, Australian National University.