Women in astronomy
Mary Brick celebrates two sesquicentenaries.

The coming year sees the 150th anniversary of the death of Caroline Herschel (1750-1848), sister and collaborator of Sir William Herschel, aunt of Sir John, and a notable astronomer in her own right. 1998 is also the 150th anniversary of the birth of Lady Margaret Huggins (1848-1915), wife and collaborator of Sir William Huggins. Both women were honorary members of the Royal Astronomical Society; Caroline Herschel was also one of its Gold Medallists.

After her brother’s death, Caroline Herschel returned to her native Germany, where she lived on for another quarter of a century. Her grave in the churchyard in Hanover is marked with an epitaph (in German) of her own composition:

“Here lie the earthly remains of Caroline Herschel, born in Hanover 16 March 1750, died 9 January 1848. The eyes of the Departed saw the whole of the astra of the present day; and all the mysteries of the heavens and the earth. This modest sailor of the skies, who numbered her among their mem-

Earthquake damage may be predictable, but what of the quakes themselves?

The November issue of *GJI* comprises a series of papers on the assessment of schemes for earthquake prediction, originally presented at an RAS/JAG Discussion Meeting in October 1996. The papers also address the social and administrative implications of earthquake prediction, and the question of whether this objective is feasible in either a strictly scientific or a socially useful sense. And the conclusion that they reach? That useful quantitative earthquake prediction is likely to be impossible.

Throughout the 100 years of modern seismology, most geophys-

Pathfinder reaches the end of the road

The Carl Sagan Memorial Station and Sojourner, the rover, are now no longer in contact with Earth. There has been no reply from Pathfinder over the past month; mission controllers have decided to scale down attempts to rouse the instruments. The mission is a success: it lasted more than three times the officially-expected lifetime, since its landing on 4 July.

Mars Pathfinder has returned 2.6 billion bits of information, includ-

impossible is regaining support following a change in perception regarding the nature and origin of earthquakes and faulting. Reid’s elastic rebound model and its associated conceptual framework of a near-homogeneous Earth are being superseded by a fundamentally heterogenous model employing the stochastically oriented concept of self-organized criticality. Within the latter model, both the initiation and the eventual progress of rupture on a fault depend on a multitude of factors related to both local stress and strength, which are inter-related and heterogenous beyond practical measurement. Thus, the course of a fracture towards large-scale failure cannot be determined practically in advance.

Other contributors show that an unusually high degree of scientific confidence is required in order for a prediction to be of significant social value. Therefore, in terms of saving both lives and property, statistical approaches to hazard assessment combined with appropriate programmes of risk-reduction continue to offer the most cost-effective means to reduce earthquake-related losses.

Dr David Booth, co-organizer of the meeting, adds: “This does not mean that society cannot defend itself against earthquakes. Seismologists know where earthquakes are and more likely, and can advise civil engineers and architects on the likely degree of shaking that their buildings will be subject to. These building professionals know how to put up these structures in such a way that they will survive and protect their occupants. So the way forward in earthquake protection remains as it has been for the past 60 years, to build appropriately in earthquake-prone areas.”