

The road to the year 3000

The simplicity of a single equation holds the key to human happiness.

Harry Harrison

It has certainly been an interesting third millennium. High points that spring to mind are the intergalactic wormhole expeditions — all 13 of them. All departed as planned. Of course, none of them has returned yet.

Perhaps more satisfying has been the global reduction of greenhouse gases. So successful has this been that, in fact, the global ice caps are growing and the glaciers expanding. The new industry of growing forests, just to burn them for the carbon dioxide that they release, is becoming a most profitable one worldwide.

Most interesting, perhaps, was the discovery in 2688 of the remains of germanium-based life-forms that might possibly have visited the planet Pluto. This is still very much of a mystery. Was it hoax or visitation? The jury is still out.

But these, and other physical events of the millennium, are far outweighed by the idea, the theorem, the equation — the concept — that has changed every element of our society, every formula, every scientific discovery that makes mankind what it is today.

At the risk of being pedantic, I draw your attention to the Universe. It exists. It functions. Interactions occur at every micro and macro level. Scientists observe, study — and discover. The animals of the Galapagos Islands had millennia to mutate before Charles Darwin arrived. It was his intelligent observations of them, then his ratiocination, that produced the *Origin of Species*.

Albert Einstein did not, of course, invent energy, for it existed independently of him, and was there for him to study — waiting, some might say, for his application, clarification and classification. He possessed the skill, the intuition, the intelligence to observe and simplify — and declare that $E = mc^2$.

These are two samples out of thousands — hundreds of thousands — that clearly demonstrate that it is the application of intelligence to observation that reveals nature's secrets. But, oh, it is such a haphazard occurrence that we must stand in awe at how much has been learned in such an unstructured manner.

Now, as we approach the end of this third millennium, and look forward to the as-yet-unrevealed wonders of the fourth, we must bow our heads in gratitude to the man and the woman who discovered, and formula- rized for mankind, exactly how the process of discovery works.



We are all familiar with the titanium sculpture of this couple, standing in the station of the lunar shuttle in Mare Serenitatis, where they met. Then, because of a photon storm, the shuttle was one hour late, and they talked.

Stern was a professor of philosophy, specializing in intuitive logic; Magnusson a physicist well known for his study of tachyons. They seemed to have little in common, other than an academic background. Nothing could be further from the truth; their respective disciplines embraced each other like the Yang and Yin.

We will never know those first words that they spoke to one another. Would that we could! We must settle for the scribbled equations on the back of an envelope: equations that poured from the fruitful mating of those two great minds. Before their shuttle trip was over, the basic theory was clear, the applications virtually universal. Before the next day was out, the equations were clarified, reduced, and finalized into the Stern–Magnusson Equation as we know it today.

Even this genius couple stood in awe of what they had created. Magnusson applied the formula to a problem of tachyon spin

that he had been worrying at for more than a year. It was solved on the spot.

Almost as an attempt at humour to alleviate the intense emotion of the occasion, Stern wrote out the equation and filled in the elements for the never-solved relationship between sunspot cycles and the birth-weight of male Greenlanders. And gasped. There was the answer — clear and obvious now that the equation had been solved.

The rest is history. With these seven mathematical symbols, mankind has regularized the dictionaries of the Anglo-Saxon language, predicted earthquakes and tsunamis, found hidden oil reserves, abolished city traffic jams — and moved on from the glorious past to the even more glorious future. No scientific discipline has resisted the irresistible logic of this equation. The Stern–Magnusson Equation is the definitive discovery of humanity, the finding that has freed mankind.

Of course we have all learned it in school. But it always bears repeating, for we can never tire of it. The Stern–Magnusson Equation goes like this...

Harry Harrison has published science fiction for 50 years. He is the author of 44 novels, the latest of which is *The Stars and Stripes Forever*.