ATTRACTING THE MEDIA

Nigel Henbest

Pioneer Productions, London, UK (www.pioneertv.com)

ABSTRACT

The media provide the essential conduit for the mass communication of science. Yet the factors that contribute to a successful media production are not necessarily those regarded as most important by the astronomy researcher. Taking television as the prime example of a medium of mass communication, I examine some of the elements that are involved in the creation of a successful and influential astronomy programme.

These include persuading the "gatekeepers" who control the media that they should screen a programme on astronomy; choosing a riveting topic; writing an absorbing script; selecting the right human interest; and creating visuals—including graphic sequences—that are compelling to watch.

INTRODUCTION

Astronomy communication is, at its basic level, simply a supply problem. A researcher has an insight into the Universe. "Out there" lies the public. As astronomy communicators, we are concerned with facilitating the delivery of the message from one to the other. Fig. 1 shows this ideal.

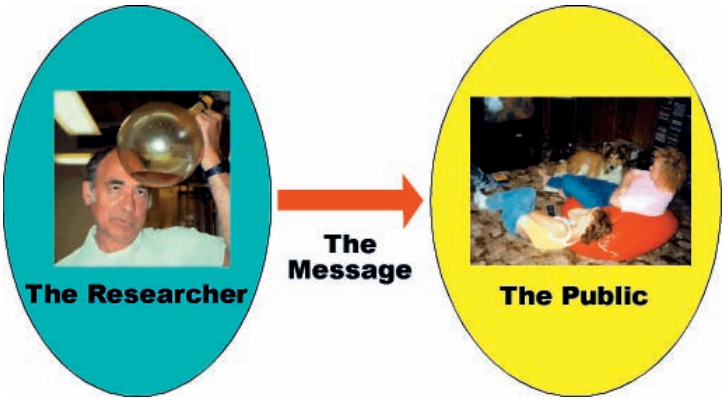

Figure 1. *The prime role of the astronomy communicator is to facilitate the delivery of the "message" from the astronomy researcher to its audience.*

The message is both overt and covert. At the obvious level, we want to involve the larger population in what astronomers are doing—to excite them about our unfolding knowledge of the Universe. We may also feel that they, as taxpayers, are entitled to know how their money is being spent. And we may hope to influence those members of the public who are opinion formers and decision makers that they should plough more money into astronomy and space research.

On a more subtle level, I believe the message should also convey astronomy as a sugar-coated pill for the harder sciences. In my experience as a communicator, it is difficult to interest the public in physics, chemistry or mathematics. By using astronomy to lure them in, we can introduce them to topics in other physical sciences.

There are many ways to convey the message. They include formal education, public outreach programmes, science centres, planetariums and dedicated websites. Here, I will focus on the role of the mass media—and take television as my primary example.

In the real world, the situation is a lot more complicated than Fig. 1 suggests—as summed up in Fig 2.

THE BIG CHALLENGE

Figure 2. *In the real world, conveying the astronomy message by means of the mass media is far from simple!*

On the positive side, the researcher is generally not isolated. A Press Office, or Public Information Office, is at hand to amplify the message—primarily by means of the press release, but also using more targeted methods of contacting the media.

Between the researcher and his/her organisation lies the media—the "meeja" as it's known in the trade. This includes television channels, radio, newspapers, magazines and books. And controlling the media are the "gatekeepers".

Gatekeepers control the output of the media. They go by titles such as Senior Editor in print publishing, and Commissioning Editor in the broadcasting media.

These gatekeepers are under constant pressure to fill their pages or air-time with many topics other than astronomy. These include soap operas, sitcoms, "reality shows," sport, news and current affairs, chat-shows, drama and so on. These topics squeeze our initial message down to a trickle that may be fairly imperceptible!

So our big challenge, as astronomy communicators, is to enlarge that final link in the conduit, and allow more astronomy through to the public. In practical terms, this means persuading the gatekeepers to commission an article or documentary on astronomy, rather than, say, the latest reality show or an investigation into the life of a sporting superstar.

THE TELEVISION WORLD

Television is the prime example of today's mass media. It has the maximum penetration of any medium. In every country of Europe and North America, 96-99 percent of households have at least one television set. The most widely screened astronomy programme of all time, Carl Sagan's Cosmos, has been seen by 500 million viewers in over 50 countries.

Today, though, the TV world is far from homogeneous. At one end of the spectrum are the relatively new cable and digital channels, usually with a specialised agenda. Astronomy finds a natural home on channels that specialise in documentaries, such as Discovery Channel and National Geographic.

The downside of cable channels is that they command only a small share of the viewing public. Even their highest rated programmes—such as Supervolcano (Discovery) and Unlocking Da Vinci's Code (National Geographic)—were viewed by less than three million households, out of a total of 105 million in the United States. In contrast, the finale of the sitcom Friends (NBC) attracted 52 million viewers.

Television ratings are still dominated by the terrestrial broadcasters such as ABC and CBS in the United States, the BBC and ITV in the United Kingdom and the ABC in Australia. Here we face the problem that the channels are all chasing the high ratings—30% or more of the total viewing public.

Commercial terrestrial channels need high viewing figures to attract advertisers, and set high advertising rates. There is a more subtle pressure on public service broadcasters, such as the BBC and the Australian ABC, to achieve high ratings. The BBC is funded by a licence fee, paid by everyone who has a television set: if the ratings are too low, critics of the public-broadcasting service call for the licence fee to be abolished.

Looking at ratings for the British terrestrial channels, we find that, typically, the top 30 places are taken by soap operas, reality shows, sport, drama and light entertainment. The highest-ranking documentaries are placed no higher than number 40 in the ratings.

The challenge we face in putting astronomy on television thus becomes a quest for high ratings. We must not think of this as being merely a matter of pandering to the gatekeepers. A documentary that is seen by a million viewers is preaching largely to the converted—the readers of New Scientist or Scientific American. If we can reach 3 million or more, then we are delivering our message to people who would normally choose not to be exposed to science.

FORMULA FOR AN ASTRONOMY PROGRAMME OR SERIES

Here are some of the empirical criteria used by the gatekeepers when evaluating a television documentary:

- Television is primarily an entertainment medium; it is not an ideal conduit for factual knowledge (as compared, for example, with books or a website). A viewer will retain less than five facts per hour of viewing.
- The typical audience attention span is three minutes. After that, the viewer's finger starts reaching for the remote control.
- To keep the viewer's attention, the programme must include a "wow" visual every three minutes or so.
- To keep the viewers stimulated, every 90 seconds we must introduce a "f***-me fact" (actual words of a senior television commissioning editor!). The gatekeepers hope that at least one of these facts will be so astounding that the viewers will be discussing it in the pub the following evening.

So a factual programme must be as absorbing and entertaining as it is informative.

My formula for a successful astronomy (or science) programme goes as follows:

- Choose a riveting topic.
- Craft a gripping storyline, with a clear script.
- Take great care over the human element – the presenter (if used) and interviewees.
- Create stunning visuals, to use the television medium to its full advantage.

TOPIC

Some of the most successful astronomy series on television have taken the very wide remit of covering the entire Universe—for example, Carl Sagan's Cosmos (PBS) and Universe (Channel 4/ TLC). When it comes to individual topics, though, the gatekeepers are often tunnel-visioned. The same subjects keep recurring in various incarnations. Cosmic impacts, extraterrestrial life, cosmology and black holes probably cover around 90 percent of the astronomy shown on television.

The gatekeepers are also notoriously wary of taking risks. This is true of all types of programming: think of all the "look-alikes" that come along after a successful new format of reality show or quiz.

To persuade the gatekeeper to commission a programme on science, it helps if you can point to a successful book on the subject, and preferably one that's had glowing reviews in the more literary newspapers! A leading article in Scientific American or New Scientist, or a front page story in a national newspaper can also prove persuasive.

SCRIPT

With an interesting and topical astronomical result in hand, the next challenge is to structure a programme that will keep the viewer watching this documentary, rather than channel-hopping.

The key element is a script that both enthrals and guides the viewer. We must tell a story that has a beginning, a middle and an end. And it must be fairly linear. Flashbacks may work in novels, and to some extent in movies, but when we are asking viewers to follow a plot that contains plenty of unfamiliar concepts, simplicity is essential.

Science, of course, doesn't progress this way. But a documentary that follows the true of course of scientific advance would be a difficult programme for viewers to follow. That's particularly true of the cut and thrust of rival hypotheses in the quest to fit theory to the observations. Although trained as a scientist myself, I have to accept that television programmes are generally going to show the end result of scientific research, rather than the true process of research.

For the same reason, it's difficult to present complex ongoing controversies on television. Once a viewer has understood, for example, the significance of the iridium anomaly in connection with the death of the dinosaurs, it's too much to present them with another bunch of scientists who dispute the cosmic impact hypothesis, by presenting a totally different interpretation. The viewer is left floundering. And a floundering viewer quickly becomes a channel-surfing viewer.

One way round this particular dilemma is to make several programmes, each featuring one of the leading theories in a controversial area. At Pioneer Productions, we have made three separate documentaries on the death of the dinosaurs over the years: one implicated general climatic change, a second the super-eruption of the Deccan Traps and the third cosmic impact!

HUMAN INTEREST

Television is a very person-driven medium. Viewers quickly latch on to the people they see on screen, even if they are merely delivering the news bulletin or the weather forecast.

So a major component in making a compelling astronomy programme is human interest. Science aficionados may be happy to watch a television documentary that deals only with facts. But to extend the reach of our programmes to a wider public, we must include people on the screen.

Sometimes a presenter can be crucial to the success of a series. Carl Sagan's Cosmos comes once again to mind. Britain has the remarkable phenomenon of Sir Patrick Moore, who has presented his series The Sky at Night (BBC) every month since 1957.

With the current trend towards more international co-productions it is becoming increasingly difficult to find a presenter who is equally acceptable in different territories. Where these include countries with different languages, it's almost impossible to use a presenter.

The human interest in a programme, then, usually devolves on the interview subjects. Sometimes, a single individual can carry a whole programme, even when it's on an abstruse subject. The BBC produced a highly successful documentary on Fermat's Last Theorem, which made gripping television because it focused on the emotions of mathematician Andrew Wiles as he struggled to solve the long-standing mathematical problem.

Generally, a television documentary relies on several interviewees. Ideally, there should be no more than half a dozen major figures, so the viewers can "get to know" them. These interviewees must be carefully researched. They must be able to explain complex topics in an accessible and understandable way and with passion.

This means that a television producer may not necessarily use the astronomer who is perceived to be the leader in a particular field if that researcher is inarticulate or unemotional. Remember, the viewers are seeing our interviewees in the intimacy of their living room, so it helps if the scientist is the kind of person that the viewers would like in their homes!

VISUALS

"Location, location, location" is as critical to the programme-maker as it is to the estate agent. Fortunately, astronomy is not short of stunning locations—virtually any observatory will form both a pleasing background and a facility where the viewer can see a scientist in action.

Real images of the Universe are also stunning—as stills. But stills are unfortunately of limited use in television. Viewers expect action on television. And the rate of action has been increasing: watch a classic series from the 1970s, and it seems slow-paced today. Lingering shots are out; rapid cutting is in. Even a wonderful image from the Hubble Space Telescope—such as the Eagle Nebula—will hold the viewer's attention for maybe 20 seconds.

In addition, many of most exciting topics in the Cosmos are impossible to image in the detail that viewers expect—examples include extrasolar planets, black holes, alien life and the Big Bang.

The answer lies in graphics sequences. The graphic may depict how an astronomical object would look close up, or it may create a voyage to—and around—an exciting cosmic scene.

Such recreations may offend the purists in the astronomical community. How can we justify the detail we put into an alien landscape, or into the flow of gas into a black hole? Such concerns, incidentally, apply to many areas apart from astronomy: the producer of a documentary on dinosaurs will have to make a largely arbitrary choice of skin colour for the great beasts.

I believe that TV graphics are entirely justifiable as long as they represent a consensus view of the object we're depicting, they violate no laws of physics, and they square with the observations that have been made so far.

But we do have to be concerned that the viewer can differentiate real images from graphics. The clumsiest method is to insert a caption saying "simulation". In almost every case it's entirely possible to do the same job with some well-constructed scripting.

For example, in our production On Jupiter (Discovery/Channel 4), we created a graphics sequence that depicts a journey down to the heart of the giant planet. The script line reads "if we could make the impossible journey to the heart of Jupiter"—the words "if" and "impossible" clearly showing this is not a real observation.

In Black Holes (Discovery/Channel 4/ABC), we created a graphic of a "starship of the future", which investigates the environs of black holes. By dropping a sub-probe into the gravitational well of the black hole, we can demonstrate the distortions of space and time in a way that would be extraordinarily difficult to describe otherwise.

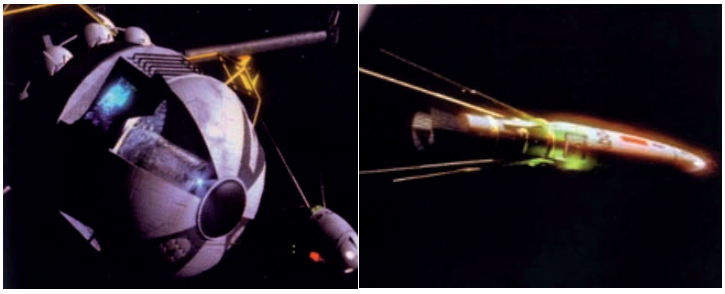

Figure 3. *Graphic sequences allow us to demonstrate the dangers posed by the gravitational field of a black hole. A sub-probe released from the mothership (left) is increasingly spaghettified (right) as it drops into the gravitational well.*

CONCLUSION

If a TV viewer with little previous interest in science comes away from a programme with a little more understanding of the Universe around us, and something of a feeling for the excitement of scientific research, then I feel that we have played a significant role in the communication of astronomy.