A GOSPEL IMAGE FOR A SCIENTIFIC APOSTOLATE (Mk 14:3-9)

José G. Funes, S.J. Director Specola Vaticana Vatican City

> am writing these pages from my "limited" perspective of someone from the world of Natural Sciences, and in particular, from the field of Astronomy. My intellectual formation is that of an astronomer who has studied a 'little' Philosophy and Theology.

> I would say that until about 10 years ago, the intellectual apostolate did not seem to be among those most sought after by the Jesuits. GC 34 could only give us one decree on the intellectual dimension of our apostolate. Perhaps we should ask ourselves the reason for this lack of interest.

In my opinion, one of the contributory factors to this lack of prestige afforded the intellectual apostolate, is the false, or at least the mistaken, image that has been projected about it and which, unfortunately, has often been based on reality. For many years now, we have had this concept of the Jesuit dedicated to the intellectual apostolate as a man who spends his whole day closed away in his room among his books (or computers) studying, for example, "the kinematics of the ionized gas in the inner regions of disk galaxies". (This was the subject of my doctoral thesis). Clearly this only arouses enthusiasm in that very small percentage of humanity, among whom I find myself, who are interested in disk galaxies. What could all this have to do with the Kingdom?

On the other hand, even though no statistical study has been made, there does seem to be a certain renewal of interest in the scientific apostolate, as evidenced by the

growing number of young Jesuits interested in Physics, Maths and Astronomy.

From hereon, I will refer to the scientific apostolate; the intellectual apostolate is wider and goes further than the limits of my "universe". The scientific apostolate can be approached from different perspectives. We could look at it from the historical perspective. From the beginnings of the Society, we Jesuits have been characterised by our contribution to the cultural (or scientific in this case) life of the church and of humanity itself. I will mention some "astronomical" examples which I think are significant.

In the Observatory of the Roman College (which continues to this day under the name of the Pontifical Gregorian University in Rome) scientific

there is nothing better for religion or for theology than "true, solid science" works were developed in the fields of Maths, Physics and Astronomy. The mathematician, Fr. Christoph Clavius, (1538-1612) took part in the reform of the calendar promulgated in 1582 by Pope Gregory XIII. Fr. Christoph Scheiner (1575-1650) confirmed the observations made by Galileo Galilei

and studied solar spots. After the suppression of the Society, Fr. Angelo Secchi (1818-1878) working in the Roman College itself, or more precisely on the roof of St. Ignatius' Church, made the first classification of stars based on an analysis of their spectra.

But Rome was not the only place where the Jesuits had an astronomical observatory. In the Jesuit Reductions in Paraguay, Fr. Buenaventura Suarez (1700-1750) used astronomical instruments he had made himself, with the help of the Guarani Indians in the Jesuit mission of SS. Cosme and Damian. Even Fr. Eusebio Kino, (1644-1711), the explorer and missionary of the Sonora Desert in the Southeast of the USA and the Northwest of Mexico, composed a brief study of a comet.

The historical perspective would be very interesting and would merit more detailed study. However, it is from a spiritual perspective that I want to look at the intellectual (scientific) apostolate. There is no doubt that the scientific tradition among the Jesuits indicates a positive attitude rather than one of "distrust" towards the sciences and this has its origin in our spirituality which is to seek God in all things, as St. Ignatius specifies in no. 288 of the Constitutions of the Society when speaking of the spiritual formation of the novices. It is interesting that this paragraph begins with an exhortation to a right intention. It is this attitude that must prevail in every apostolate, including the scientific one.

Before offering my reflections on the spirituality of the scientific apostolate, I would first like to indicate the challenges that arise from the scientific world; otherwise I run the risk of talking about a spirituality which is far from being incarnational.The

Challenges

We always speak out of our own knowledge and so the challenges I refer to will be focussed or conditioned by my perspective as an astronomer.

When Leo XIII founded the Vatican Observatory in 1891, he did so not only to show that the Church and her ministers were not opposed to true, solid science, but that they were dedicated to promoting it. (Motu Propio "Ut Mysticum"). Those were difficult times in the relationship between Churchmen and Scientists. I believe that the true value of Leo XIII is that he was committed to "true, solid" science. Although the words of John 8:32 do not refer to the relationship between faith and science, I think it no harm to remember that the truth will set us free. This includes scientific truth. Put in a few words, and at the risk of being misunderstood, there is nothing better for religion or for theology than "true, solid science". So, more than a hundred years later, what are the challenges that we face today? I mention just two.

Intelligent design

This is a controversial subject in the English speaking world, and especially in the United States; it is connected with the teaching of science in state schools. The defenders of intelligent design maintain that the evolution of the universe and of all living creatures requires the existence of an intelligent cause. They also affirm that this theory is a scientific one and that it should therefore be taught in schools as part of the science

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curriculum. On the other hand, the American Astronomical Society, of which I am a member, has made public its position, stating that intelligent design is not a science and therefore should not be taught as part of the science curriculum. The debate is a delicate one and I cannot do it justice in one or two paragraphs, but as far as I am concerned it offers a challenge to the entire Catholic world. How is science taught in our schools and universities? Are our students capable of relating what they learn in their science lessons or from the media, with their faith? Are they separate worlds? Is our faith still the faith of the carbon age in a world that needs a 'wireless' faith? Do our young people know how to integrate their scientific knowledge in a wider more rational scheme of things?

Science and Justice

The problems are different in the under developed world. Here, one of the greatest deprivations is the lack of interest in science. It is true that there are other pressing needs. When facing problems of dire poverty, there is neither the desire nor the energy to think about "intelligent design". Instead, we ask ourselves why there is so much suffering, why it is the innocent who suffer. Perhaps the reader will be good enough to let me tell a personal story (I will do so anyway, whether you let me or not ...) I spent some time in Tegucigalpa, teaching a course in extra-galactic astronomy (the study of galaxies which are different from ours). At the last moment I was asked to give a talk to secondary school students. At the end of the talk a young female student came up to me and said: "Thank you for coming to Honduras". To promote science in the underdeveloped countries is to promote justice. These countries will never make progress unless we help them become more scientific.

Science is power. On this same trip an anthropologist showed me the ruins of Copan. The Mayas were very good astronomers. I asked him why they were so interested in astronomy, was it for agriculture, the religious festivals? "Power," he replied, "knowledge of astronomy gave power to the ruling classes." Will our political leaders never learn that it is worth investing in science instead of social assistencialism, which in the best of cases results in creating a dependent people rather than a free people? José G. Funes

Crossroads

These are some of the crossroads where we find ourselves at this moment in time. I'm not saying they are the most important but they are the ones that will shape future generations. Paul VI told GC 32: "Wherever in the Church, even in the most difficult and extreme fields, in the crossroads of ideologies, in the front line of social conflict, there has been and there is confrontation between the deepest desires of the human person and the perennial message of the Gospel, there also there have been, and there are, Jesuits". The scientific apostle also finds himself at the crossroads of present day culture.

Those of us who were ordained together wanted to write on our ordination memorial cards what GC 34 said about the Jesuit priest in decree no. 6 #12: " ... their ministry is particularly directed towards those who have not heard the Gospel; those who are at the margins of the Church or of society; those who have been denied their dignity; those who are voiceless and powerless; those weak in faith or alienated from it; those whose values are undermined by contemporary culture; those whose needs are greater than they can bear. For the Jesuit priest, the world is where he is to be most active, in the name of Christ the healer and reconciler."

We Jesuits are not cut out to work in the sacristy or in the 'peace' of our rooms. Those of us who work in the scientific apostolate also want to find ourselves on the boundaries between the Church and the scientific world. One of the things Paul VI entrusted to the Jesuits in GC 31 was the fight against Atheism. In the times we are now living in, I don't believe even committed atheists can be found! Nevertheless, there is an idea flying around in certain cultural circles, that for an intelligent, cultured, broadminded person, faith is 'nothing more' than the consequence of ignorance, a necessary stage, perhaps, in the evolution of humanity. In these circles anyone whose thoughts spring from Catholic principles is seen as a traditionalist, a conservative. We have to recognise that the recent growing strength of certain extremist religions, which feed on ignorance, does nothing but confirm this view. What can best serve faith in our current culture? How can we proclaim our faith in this Unknown God, or this mistakenly-known God, in the Areopagus of our global Athens? (Acts 17:23).

Our Witness

A question that is often put to the Jesuits of the Vatican Observatory is the following: 'How can you reconcile faith and science?' The answer that we give by the testimony of our lives is far better than any taken from 'out-of-date' apologetics. When I say 'out-of-date' I am referring to the type of theological arguments which are incapable of answering the deepest questions of present day man and woman, either because they treat problems from 'another planet' or because their language is incomprehensible.

A Gospel Image

Some time ago while studying for my doctorate in Astronomy, I visited Padua where the Italian Jesuits have a formation house for their philosophy students. One of those students asked me: "Where does God come into your research?" From time to time it's good to ask why we do what we do. It's the 'right intention' that St. Ignatius asks of the novices – and of those of us who are novices no longer!

It was as a first year Theology student that I was designated as a future astronomer in the Vatican Observatory and told to do all the preparation necessary for this; since then I have often asked myself, 'Would it not be better to dedicate my life to the poor?' I have found many, fairly convincing, answers to this question.

- I form part of the body of the Society; it's not a matter of just my life being dedicated to the poor, but the energy of the whole of the Society. My specific gifts as an astronomer make me a more useful tool in the scientific apostolate.

- Obedience is of prime importance in our vocation. I was given this mission first by my Provincial and then by Father General. A Jesuit Superior not only knows his men, he knows the needs of the Society which he sees from a 'universal' viewpoint and thus allocates the mission of each person thinking about what will best serve God and the 'universal' good.

- But it is in the anointing in Bethany (Mk. 14:3-9) that I find greatest consolation. In the eyes of the world our lives as religious are 'wasted', as was the money 'thrown away' on perfume for the Lord. What does it profit a man to gain the whole world if he loses himself? (Lk.9:25; the gospel for

the feast of St. Ignatius.) Is our time spent praying, time wasted? Although I am no master in the art of prayer, I sometimes say that unless we actually 'waste' time in prayer we cannot learn to pray. It would be difficult to find a more 'wasted' life than one spent studying the galaxies! The Lord said: "you have done what you could". We do what we can.

As there are different ways of living out the Jesuit vocation, so there are different ways of living out the scientific apostolate in a spiritual way. Without going into too much detail and at the risk of reducing them to stereotypes, I will refer to two Jesuit

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'models' or ways of procedure in the scientific apostolate as exemplified in Matteo Ricci and Pierre Teilhard de Chardin: the first, a missionarymathematician, the second a mystic-palaeontologist.

Without denying that we are all 'mystics' in the sense that we are all called to seek God in all things, I can identify more with Matteo Ricci. Astronomy is an excellent apostolic medium; in fact it is one of those natural media that God's instruments (that is to say, the Jesuits) have at their disposal to aid their neighbours (Constitutions of the Society 814). Astronomy opens up horizons, puts our human existence into perspective in the history of a universe that has been in existence for 14 billion years. We Jesuits are just 467 years old!

The Scientific Apostolate and Asceticism

The Scientific apostolate calls for a long, obscure preparation, a 'hidden life' in Nazareth, I would add that the preparation of any Jesuit generally calls for a long, obscure preparation. A scientific article is the fruit of many hours work. To-day, in a society which judges everything by immediate and sensational results, should we not be drawing attention to these values?

The scientist, driven by his great passion for science develops, probably unconsciously, an ascetical life-style which is totally directed

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towards his investigation/research. Long hours of work and striving. Without exaggeration a student working towards a doctorate in Astronomy could work 10 hours a day over periods of months or even years. This could lead, in some cases, to a serious deterioration in his/her family life. In the same way, a Jesuit dedicated to a scientific apostolate could run the risk of alienating himself from his community and from other problems affecting our world to-day. It was not without reason that Fr. Arrupe recommended that those dedicating themselves to an academic apostolate should maintain contact with the poor. I believe that we Jesuits have become lax in the interpretation of the vow we all made at profession "to instruct the children and uneducated persons" (Constitutions 528). Are we capable of transmitting to these children and to the poor, not only the basic teachings of the catechism but also our scientific knowledge? While it is true that intellectual work demands the attention of the whole person (Constitutions 340, GC 31, decree 29 on the intellectual and scientific apostolate, n.2), this should not be at the expense of our love of God and the poor.

Scientific apostolate, Collaboration and Spiritual Fatherbood

Normally our intellectual-scientific apostolate is carried out in the context of the university and collaboration with colleagues at international level. These days it is impossible to undertake any scientific project alone. The biggest and most successful scientific projects are carried out by teams. For example, the last Nobel Prize for Physics was awarded to John C. Mather and George F. Smoot for their discovery of the blackbody form and anisotropy of the cosmic microwave background radiation, that is, the light which appeared when the universe was only 300 thousand years old. These two men are the leaders of a team comprised of hundreds of people. This type of collaboration is not limited to one university or country. Very often one country or university, on its own, would not be able to fund such a huge project. Once again we are faced with a very interesting challenge: the possibility of involving the poorest countries in this kind of co-operation. It is a difficult mission, but not an impossible one!

The intellectual apostolate (in fact I would say any type of investigation) is closely linked to university teaching even though there should not be a strict connection. This is how GC 34 understood it and it is

why the decree on the Society and university life follows the decree on the intellectual dimension of the Society's apostolate. Anyone who wishes to set up a school of thought must have disciples if he does not want his work to die with him. We all want to live and to communicate our ideas. The intellectual apostle exerts,

more or less consciously, a spiritual fatherhood over his students. It is here that I believe our witness can be of great value in the university circles in which we move. Those of us familiar with the academic world know that relations between colleagues and between professors and

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students are not always based on Gospel values! Our vocation gives us great freedom of spirit to be able to avoid the brutal competitiveness and sufficient peace of mind to know that even if we don't publish, we will not die. 'Publish or perish' is the constantly repeated slogan in the academic world. We can certainly run the risk of 'perishing' without 'publishing'. This freedom of spirit and peace of mind gives us the opportunity to make choices in our research so that, instead of looking for immediate results, we can set our sights on long term studies that are able to provide the answers for deep seated problems; something which the present day desire for immediate results cannot do. We would do well to apply the criteria of spiritual discernment that we use in our daily lives and in our choice of ministries

This interior freedom makes us points of reference for those of our colleagues who seek a word of advice or simply the support they need to enable them to continue acting decently in a world where ethical codes are not always respected.

He must increase and I must decrease (Jn. 3:30). It is most gratifying to see the intellectual growth in a student. The more independent they become of their professor, the better! For me this is similar to what St. Ignatius writes about 'the one who gives the exercises' (rather than the director): "...he should narrate accurately ... and add only a short or summary explanation; because when one in meditating goes over it and reflects on it for himselfthe grace of God enlightens his mind; this

produces greater spiritual relish and fruit than if one in giving the exercises had explained ... the meaning at great length." (EE 2). Here I owe a great debt of gratitude to my students who have stimulated me in scientific investigation in the same way that the one giving the Exercises is consoled on seeing the action of God in the one doing them.

On Being a Bridge

As a Jesuit and an Astronomer I belong to a long and rich tradition in the Church and in the Society. As a Jesuit this mission drives me on to seek God in all things, investigating with passion and humility the truth about the Universe, above all studying the galaxies which I take such delight in watching. I also seek the Lord who makes Himself present to me and challenges me in every person I meet and with whom I collaborate; especially my colleagues, students, and those with whom I can share what I have learned and continue to learn about the Universe.

The Society is an Order of priests and a priest is a mediator between God and humanity. And he does not need to be celebrating the sacraments to be a mediator. As a priest I try to be a bridge between God and humanity, between the Church and the scientific community, in my case the community of astronomers. In addition I try to bring a different perspective to the church community, a perspective that comes from new scientific discoveries. At the same time, in the scientific community where very often the laws of merciless competition reign, I try to be a witness of a 'gospel way' of investigating.

In conclusion, to be both an astronomer and a priest means being a minister of reconciliation between the Sciences and the Church, seeking to heal all the wounds which have been inflicted throughout history in one place or another.

Translated by: Patricia Carney, CP