Astronomers as SSR
(Society Science Relays)

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I - Astronomers as Society Science Relays (SSR's)
   – Astronomers are a big asset to society…

II - Algeria & IYA 2009
   – History of Astronomy in Algeria
   – Some bright moments of IYA 2009
Astronomers as SSR's

• **Astronomers versus physicists**
  - *Astronomers are a big asset to society*
  - *Who is more useful to society, astronomers or physicist?*
    1. *Astronomers are more useful*
    2. *Every physicist who respects himself ought to be an astronomer (cognizant of astronomy) anyway!*
    3. *Furthermore, every astronomer is a bonafide physicist (or almost all)*
Astronomers as SSR's

What is my point in comparing them?

For Society, astronomers and physicists are very different!

1 - Physicist study matter at the smallest scale (crystals, atoms, elementary particles) and astronomers look at the largest scale (stars, galaxies)

2 - Astronomy is love at first sight, the Waw science. Physics is the most boring one
Astronomers as SSR's

• What is my point in comparing them?
  • At the conceptual level we know that they are pretty much intertwined:
    - ... the same laws of physics are used to describe what is going on at the smallest as well as the largest one...
    if you don't push it too far!
    - In the seventies, the marriage between particle physics and cosmology has taken place!

L. Lederman made this very pithy statement:
  – "Particle physicists look down with their microscopes and astrophysicists look up with their telescopes and find they are looking at some of the same things…"
Astronomers as SSR's

• **So, in the public's eyes, astronomers are more useful (and interesting) than physicist!?**
  
  • *If it is so with respect to physics, it is also so for other branches like:*
    
    - geophysics
    
    - biology
    
    - meteorology
    
    ...

    Each one studying a subset of the Great All!
Astronomers as SSR's

• So what makes it so useful, what makes it such a great societal asset?

You know the answer:

*In order to spread scientific culture!*

*Is there a better way to do that than by using Astronomy?*

*The science which draws:*

- *the grand picture, the grandest of all*
- *establish the grand connections,*

*In the public’s eyes, it is the épitomé of science, the easiest to popularize (Thanks in no small measure to Hubble)*
Astronomers as SSR's

- **The Science of:**
  - The (most) beautiful
  - The (most) mysterious
  - The (most) adventurous
  - The ever unfolding news (higher and higher z galaxies, new extrasolar planets …)
  - The "spiritual" (Asking existential questions about yourself, your place in the Universe, about its creation…)

Astronomers as SSR's Astronomy:

- It is by far the easiest science to popularize.
- It is the only discipline which can fire up people’s imagination, and make science palatable in general.
An Ode to Astronomy

“How is the Sky working” Galileo

– **Astronomy, the Science of the Heaven**
  - Every civilization has practiced astronomy
  - The arabo-islamic civilization, imbued of the things from Heavens was a pioneer in practicing it.

– **Galilée: The Sky opens up to Mankind**
  - The stars get some spatial extension
  - The Sky reveals itself in its complexity and richness

– **Newton: The explanation follows**
  - The art of predicting … the motions.

– **The Astrophysical Revolution**
  - The art of using the Physics to probe the Universe:
    The stars, the galaxies, ISM…
  - The art of using the Universe in order to learn about physics:
    The ultra dense matter and the ultra diluted one, the space-time, the dark matter……

– **The Cosmological Révolution …**
An Ode to Amateur Astronomy

“We are all citizens of the Sky” C. Flammarion

- **The Passion of observing the Sky**
  - The Ecstasy in observing the Sky, which reveals itself the more we observe it with attention.
  - Announcing a coming eclipse… is celebrating science
  - This passion can be communicated, shared: a communauty of astronomers, a same sky to observe.

- **A Mystical side**
  - Certains verront en cette régularité, cette harmonie, une ascèse, voire une manière de louer leur Seigneur
  - D’autres concluront différemment …ou ne concluront pas.
  - Séculaire ou religieux, selon les goûts

- **A Focal Point for activities and skills**
  - L’art de capturer le Ciel sous toutes formes de média
    - Après avoir prêté l’éphémère, le capturer
    - Sur film, sous forme numérique, à main levée …
  - Photographie, l’informatique, l’art…
CONCLUSION

As scientists, astronomers in particular have a dual role to play in their societies:

1 - Producing knowledge
2 - Be SSR's (Society Science Relays)

One can’t be an effective science communicator if one has not tasted science, its excitement, its frustration...

Thus the importance of being (or having being) an active scientist to be an effective SSR.
Astro\(\Phi\) is \(\Phi\)un
Astronomy in Algeria
N. Seghouani & J. Mimouni

- Astronomy in the Northern half of Africa
- Astronomy in Algeria
- Some bright events that took place during IYA 2009
Astronomy in Medieval Era till the 19th century

• Astronomy in Algeria during this period (10-19 century) was very prolific.

• Many Algerian scholars were working in astronomy:
  – Ibn Qunfudh (XIV) born in Constantine 1330 (position of stars, astronomy mathematical …)
  – Al Habbak (XIV) Born in Tlemcen (well known for his work on astronomical calculations, and astrolabe making…)
  – Al-Akhdari (XVI) , Al Buni (XIth century)…. 
  – Al Hafidhi (XIX-XX)

• The city of Béjaia, as an example, has known great scientific development, and has welcomed many scientists across the world (Fibonacci, Abu’l Hassan Ali, Al Raqqam…)
  – Algeria ➔ Important historical legacy in Astronomy
Astronomy during the Colonial era

- 1830-1962: French Colonization
- Creation of a meteorological station at Algiers in 1856 (Paris’s Observatory)
- 1883-1890 Creation of the Algiers Observatory at Bouzaréah (Altitude 345m)
- It is the second observatory in Africa (after the Observatory of Cape Town 1820)
- The main buildings: Library, administration are very similar to Nice Observatory
L’Astrographe or Equatorial Photographique (1890)  
*Gautier* (*Ø*=34cm et *f*=3m43)  
Main Project at the Observatory (1895)  
Sky Map Project (Carte du Ciel)  
*Actually there is more than 5000 photographic plates* stored there

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*Lunette équatoriale* (refractor):  
Le Grand Cercle Méridien (1888)  
*Gautier* (*Ø* = 19 cm et *f* = 2m30)
Télescope de Foucault (1888)
September 1861
The Telescope was fabricated by Secrétan:
Newtonian, Ø=50 cm, f= 3m50

L’Equatorial Coudé (1888)

Gautier (Ø= 32cm et f=6m60)
The Post Independance Astronomy in Algeria

• The legacy of the Bouzaréah Observatory near Algiers
  - The “Carte du Ciel” project.
  - Not one single Algerian astronomer was to be found at Independence time.

• Astronomy survived in the sixties and seventies
  – Algerian astronomers were home bred …
  – The research centre in Astronomy was dependant to the Interior Ministry as part of the CRAAG (Seismic monitoring…)
  – The lack of any link with the academic sector (Thus only in house evaluation…)

• The disappearance act in the eighties

• The Nineties and its slashed hopes
  - An astrophysics Dept. project at Emir AbdelKader University at Constantine which however didn’t come to light
  - Start of a graduate study program in astrophysics at Blida University, near Algiers

• The Sirius interlude in Amateur Astronomy

• The coming of age of the national « Ecole Doctorale d’Astrophysique » in 2007

• The project of a National Observatory in the Aurès mountain range
L’Ecole Doctorale d’Astrophysique

- Collaboration between 4 Universities & research centers.
- Entrance exam, 12 students in the first year…
- International teaching team …

More at:

http://astrophysique.110mb.com
The Aures Observatory Project

- **The New Observatory planned to be set up in the Aurès mountain range**
  
  The first observatory since the independence of Algeria. In fact, the second one of importance after the Bouzaréah observatory built in 1883.

- **Could IAY2009 be turned into an *annis mirabilis* for Algeria?**
  
  In some sense it did! If IYA-2009 didn’t see the actual setting up of the Observatory, it did see its official adoption as a cornerstone project in the scientific program of the Ministry of Higher Education.
Astronomy Year 2009 in Algeria

Various documents, reports, diaporamas… at:
http://www.siriusalgeria.net/iya09/ProgIYA09Algeria.htm