

## Frontier Research in Astrophysics 2018 Concluding Remarks IV

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**René Hudec**<sup>\*†</sup>

*Astronomical Institute of the Czech Academy of Sciences,  
Fricova 298 – CZ 251 65 Ondřejov, Czech Republic  
and Czech Technical University in Prague, Faculty of Electrical Engineering,  
Technická 2, CZ 160 00 Prague, Czech Republic*

*E-mail:* [rene.hudec@gmail.com](mailto:rene.hudec@gmail.com)

This paper contains the printed version of the concluding remarks I gave at the Mondello Workshop 2018 on Frontier Research in Astrophysics – III, held in Mondello, Italy, May 23–28, 2018.

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<sup>\*</sup>Speaker.

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## 1. Introduction

As for the previous conferences in this series, the idea of the international workshop Frontier Research in Astrophysics – III was to bring together researchers (astrophysicists, particle physicists, and astronomers) who are involved in various topics at the forefront of modern astrophysics and particle physics. The workshop discussed the most recent experimental and theoretical results in order to advance our understanding of the physics governing our Universe. The goals of the workshop were achieved by a synergy between data from ground-based and space-based experiments, as well as results from theoretical developments. This work at the forefront of science is very likely to result in scientific papers of significant import.

In my opinion, the main purpose of the workshop, which was to discuss in a unique and collaborative setting a broad range of topics in modern astrophysics, from the Big Bang to Planets and Exoplanets, has been accomplished. It is evident that the scope of the workshop has provided a suitable framework for each participant who (while obviously not involved in all the topics discussed), was able to acquire a general view of the main experimental and theoretical results currently obtained. Such an up-to-date view of the current research on cosmic sources, as presented by workshop speakers and participants, can help guide future research projects by the participants, and surely will encourage collaborative efforts across various topical areas of research.

## 2. A very few subjective comments

In my opinion, the 2018 Frascati Workshop in Mondello, namely Frontier Research in Astrophysics – III, represents another confirmation of Franco Giovannelli Vulcano Theorem (more details were given in Professor Franco Giovannelli concluding talk). Apart from this theorem, the keys for a productive workshop are, in my opinion, very obvious: a nice environment, especially delicious dining, and staying together. This allows contacts and discussions among participants not only during the scientific sessions, but for the whole duration of the conference.

In comparing the previous Frascati Vulcano/Mondello workshops with the 2018 workshop, it appears to me that this was innovative in the sense that it covered a wider range of scientific fields than before, even while focusing on the frontiers of astrophysics. Including a wider range of topics is definitely a positive move. For example in X-ray astronomy and astrophysics, there are communities working in solar, and even planetary and cometary research, and bringing them together with the galactic and extragalactic X-ray astronomy community is surely beneficial for all.

And what is also very important, there has been a strong participation both of leaders as well as young scientists in these fields. Most importantly, there have been many occasions for young researchers to meet famous scientists they had known previously only from the literature, both in the question periods and in informal settings.

Last but not least, I note the very high quality of the invited and review talks – this is not trivial as we face the problem of the declining quality of such talks at numerous other conferences.

On the other hand, even in Mondello conferences we face common problem, namely that numerous participants do not stay for the whole conference duration as they attend two or even more meetings in just one week. Including wider topics seems to be positive albeit may be reason of de-

clining number of participants in some sessions (e.g. gravitational waves/high-energy astrophysics versus exoplanets).

In my opinion, the following selected pictures taken during the workshop will better illustrate the scope, atmosphere, and success of the conference Frontier Research in Astrophysics – III better than words. As always, some participants have attracted much more attention of conference photographers than others. We apologize for that.



**Figure 1:** Conference group photograph.

### 3. Conclusions

In conclusion, I am confident that the goal of the workshop was achieved by the synergy between data from ground-based and space-based experiments as well as results from theoretical work. This work on the forefront of the scientific enterprise is likely to result in high-impact scientific research. Hence, the main purpose of the workshop (namely, to discuss in a unique and collaborative setting a broad range of topics in modern astrophysics) had been achieved. I also believe it will encourage collaborative efforts across various topical areas of research.

#### Acknowledgements

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**Figure 2:** Conference session.



**Figure 3:** Scientific sessions.

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Figure 4: Speakers.



Figure 5: Speakers.

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**Figure 6:** Etruscan wine party.



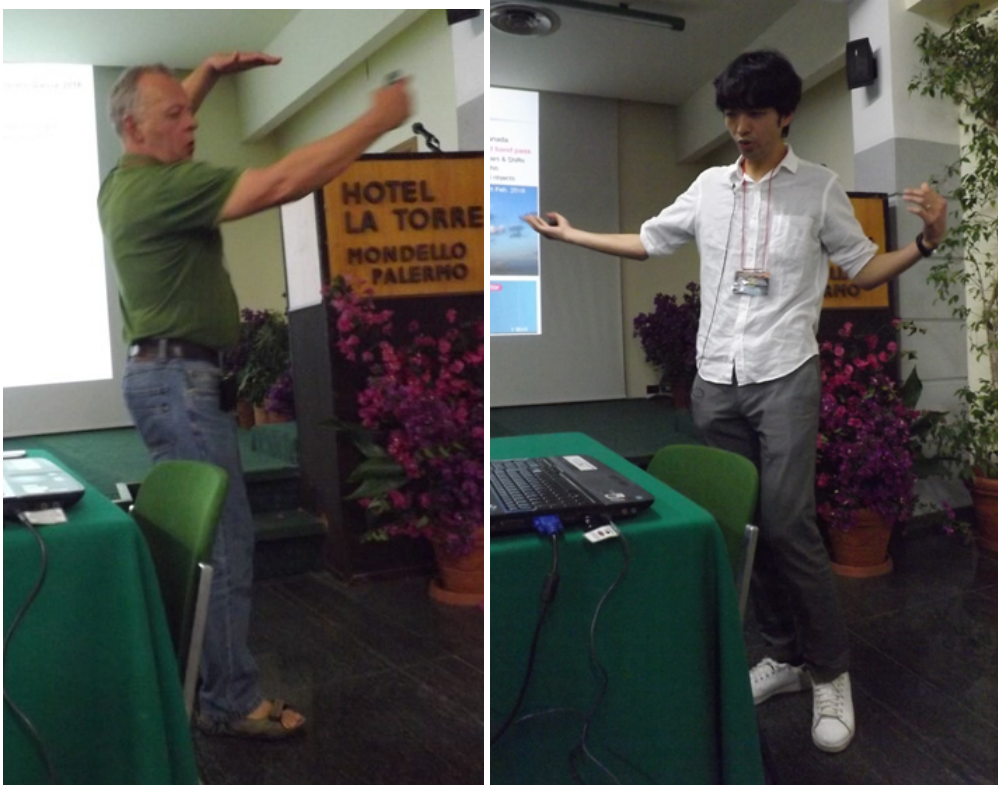
**Figure 7:** Coffee breaks with delicious Sicilian coffee.

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Figure 8: Conference chairs.



**Figure 9:** In this conference, quite numerous speakers have illustrated the size of accretion disc in their models, in some cases even in rotation (left).





**Figure 10:** Another speakers demonstrating sizes of their accretion discs...

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**Figure 11:** Questions/answers represented important part of the conference.



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Figure 12: Cultural event.



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Figure 13: Conference highlights.



**Figure 14:** Conference highlights II.

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