CELEBRATING FIVE YEARS OF *BRITE*-CONSTELLATION WITH GOOD GOOD GOOD, GOOD VIBRATIONS DURING THE END-OF-CONFERENCE SUMMARY PARTY

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How does one summarize 87 talks and 118 poster presentations in half an hour while keeping the attention of the participants, most of whom have trains or flights to catch? Surely not by going over each contribution with a boring sequence of 8-seconds-per-presentation statements. I therefore decided to run a different *once-in-a-lifetime* show, building up a science story from (sometimes scientific) quotes of statements that were made by participants during the conference. There were plenty of quotes available, including Laurent Eyer's "*Gaia* brings stars (and us!) in motion", so two of them got an upgrade by being coupled to a musical (dancing) intermezzo (see Fig. 1).

The first quote came from the editor's choice for the front page of *Nature Astronomy*, Volume 3, issued just before the conference (August 2019) and triggered by Gerald Handler on the fourth day of the meeting: "Good vibrations" (`https://www.nature.com/natastron/volumes/3/issues/8`), referring to gravity waves detected in numerous O-type stars and blue supergiants from *K2* and *TESS* space photometry (Bowman et al. 2019). One of my favourite songs, "Good, good, good, good vibrations" from *The Beach Boys*, hence kick-started the talk on the major topic of angular momentum transport. Various contributions touched upon improving the theory of stellar interiors to eliminate the current discrepancies between theory and observations for the slow core rotation of stars and the near-rigidity of the rotation in phases when stars have a convective core. Given that several of the OBA-type variables observed with *BRITE* and *TESS* are known to be magnetic (e.g., David-Uraz et al. 2019), a second musical band passed the stage: *The Magnetic Fields* (their music causing mood depression of the author). Numerous contributions on magnetism were presented during the conference, connected to angular momentum transport, magnetic braking and rotation, stellar winds and mass loss, and dipole mode depression in red giants. If the observed phenomenon of mode depression is due to magnetism, then it is required half of the F-type dwarfs to have a strong interior magnetic field (Stello et al. 2016). However, several (all?) dipole modes with depressed amplitudes are mixed modes (Mosser et al. 2017), so nonlinear resonant mode coupling offers a promising alternative and not mutually exclusive explanation (Weinberg & Arras 2019). This is particularly attractive, since nonlinear mode behaviour is omnipresent in space asteroseismology, across almost all masses and evolutionary stages. Notable contributions to this topic from *BRITE* studies of Be stars were presented during the meeting (following earlier findings, e.g., Baade et al. 2017).

Given the *Kepler* space photometry programme and the convenient and easy-to-use scaling relations, much emphasis on asteroseismology has been injected into research of low- and intermediate-mass stars during the past decade. The repurposed *K2* mission added their remnants as popular asteroseismology targets (Hermes et al. 2017). We have thus reached the stage of having a complete evolutionary path, at least of stellar birth to death, covered with asteroseismic data to rely upon for the improvement of the theory of stellar interiors. Much modelling work is yet to be done and new theories are to be developed, guided by the asteroseismic results. A wealth of information can be found in the recent extensive reviews by García & Ballot (2019) for dwarfs, Hekker & Christensen-Dalsgaard (2017) for red giants, and Córsico et al. (2019) for white dwarfs. Aerts et al. (2019) has united all those evolutionary stages into one global picture of angular momentum transport, but we still lack the pre-birth phase. Asteroseismic tuning of the transport of chemical elements is a lot harder, but various contributions during the conference revealed that it too is also coming along, and demonstrating a clear need to have more massive cores in models of intermediate- and high-mass stars across their evolution. It was stressed during the meeting how important are the ongoing and future studies of high-mass stars by *BRITE, TESS* and *PLATO* for covering their evolution and calibrating their interiors in the presence of rotation, magnetism, and a variable wind. Several neat results from *BRITE–TESS* bi-satellite campaigns on B-type single and binary pulsators were presented. And of course *BRITE* occupies an immense niche for the highest-mass stars in the

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Universe, whose winds are so strong that the detection of asteroseismic signals remains challenging, if not impossible.

Many of the topics treated during the conference have been included in general reviews written for a broad readership by Aerts (2020), with numerous references to recently published work that had been highlighted in talks and posters. In particular, the glorious future of asteroseismology, as emphasised during the last day of the conference, gave rise to a poll in between the dancing. The audience was asked to vote, from several options, where our focus should lie and our attention should go with the highest priority in our community. The reader will find the outcome of the poll in Sections IV and V of the review by Aerts (2020).

Fig. 1. The show at the end of the conference on "5 years of *BRITE*" featured scientific highlights intertwined with acts involving the audience. Here, Werner Weiss and Conny Aerts are dancing with help from the song, "Good, good, good, good vibrations" by *The Beach Boys*, with encouragements from members of the *BRITE* Executive Science Team (BEST). Photo credit: @Herbst-Kiss.

The author is much indebted to the audience for their cooperation and activities during this end-of-conference talk. The act will not be repeated for those who were absent or left early.

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