The possibilities -- and risks -- in looking in other directions

Bengt Gustafsson[1,2]
[1]*Uppsala University, Uppsala, Sweden*
[2]*Nordic Institute for Theoretical Physics (Nordita), Stockholm, Sweden*

Based on some examples I shall discuss how astronomy, and in fact humanity, benefits from original and unusual approaches in the scientific process. The problems in suggesting and advancing such approaches, whether based on originality in thinking or in personality, or on trust in mere serendipity, are however, considerable. Thus, careers for individual scientists may be at risk, as well as financing of large long-term projects, if too daring new approaches are taken. How could these problems be solved? Possible reforms of career patterns and decision-making among financing bodies will be discussed. A point I will make is that further discussion of individual examples may bring more clarity to this issue, and at least give inspiration to many of us to try new approaches, and watch out for real discoveries when they appear instead of regarding them as disturbing factors that threaten our immediate plans. However, also the risk of leaving systematic science for spontaneously chasing possibly spectacular discoveries will be commented on. Special consideration will also be given to the significance of flexibility in time scales in major research projects. The art of planning such projects without relying too much on fixed dead-lines for specified work packages will be addressed and found to be very intricate. In the end, some tentative recommendations will be given, to individual young scientists, to research leaders, to research organisations and to politicians.