

6. EVOLUTION IN YOUNG POPULATIONS IN GALAXIES

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THE CONCEPT OF YOUNG POPULATIONS

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At the last General Assembly of the IAU, in Patras, we had a Joint Discussion about the evolution in old stellar populations in galaxies. Then, as will be the case today, the great emphasis was placed on star formation and stellar evolution, on luminosity functions and mass functions. Today our theme does not include the word stellar. This is intentional. The young populations we are going to discuss will to a large extent concern the gaseous component in galaxies. The gas and the dust may from some points of view be considered old. However, when it takes part in star formation we discuss it as a part of the young population.

Galaxies will contain this population in their disks particularly in their spiral-like structures. Much new light has been shed on the problems of star formation since the discovery of molecular clouds about ten years ago. It is fitting that several of our review papers concern molecular clouds and their evolution.

As you see from the programme we shall start with the young stars and the gas of our galaxy before lunch and after lunch move on to the young components of other galaxies and end by contrasting the steady chemical evolution with faster events. I am looking forward to listening to a series of expert reviews in one of the most topical fields today.

By a strange coincidence, today is the day when one of the giants in galactic research would have become 90 years old had he still been alive. Bertil Lindblad would doubtless have enjoyed many of the highlights of today's discussions. I am also certain that his critical mind would have questioned some of the things we are going to hear. Let us all listen well, believe some of what we hear but discuss what needs scrutiny.

Today's four sessions will be chaired by Ken Janes, by Butler Burton, by Per Olof Lindblad and by myself. Each session will contain invited reviews followed by an open discussion. Note that there will be no discussion between the individual reviews of each session.

I will hand over to the first session chairman, Ken Janes.