EVOLUTION AND STAR FORMING PROPERTIES OF BOK GLOBULES

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Bok globules are small, isolated, compact clouds, which often show a large degree of regularity. Typical angular sizes are from a few arcminutes to roughly 20 arcminutes. Typical masses are from 15 $M_{\odot}$ to 60 $M_{\odot}$, and temperatures are in the range 9K to 19K.

A large system of cometary-shaped Bok globules exist in the Gum nebula, with dense, bright-rimmed heads and long luminous tails, all pointing towards the central objects Zeta Puppis, Gamma Velorum and the Vela pulsar. At least four of the globules show signs of star formation events: two are associated with Hα-emission stars and two with Herbig-Haro objects, and they provide clear evidence that star formation is indeed possible in Bok globules.

For one of these stars, Bernes 135 = CoD -44°3318 optical and ultraviolet spectrophotometry has been combined with optical and infrared photometry. The main conclusions are that Bernes 135 is a pre-main-sequence star of early F-type with a superimposed emission line spectrum, both ultraviolet and infrared excess, and a location in the HR-diagram between the T-Tauri stars and the Herbig Ae/Be stars.

It is argued that the cometary globules are precursors to the wellknown isolated Bok globules, and the following scenario is proposed for the formation and evolution of globules. When a very massive star like Zeta Puppis is ignited in the neighborhood of small clumpy molecular clouds, the ultraviolet radiation disrupts the clouds through evaporation, the rocket effect and radiation pressure. The core(s) of such a cloud will be much less influenced by these effects due to the much higher density, and therefore a *separation* of the core and the remnants of the cloud occurs. In the shadow region behind the core a tail of eroded material from the core and left-over cloud material will for some time survive. This is the stage which the cometary globules in the Gum nebula have presently reached.

As a side effect, the compression of both clouds and cores will initiate second-generation low-mass star formation events, and globules are therefore likely to be surrounded by a few T-Tauri stars, and may in their *outer layers* have embedded young stars. After the disappearance of the short-lived luminous source(s) that triggered the core-exposure, the globules that have not evaporated or been disrupted by internal star formation will relax and eventually dissipate.

In some cases, the central regions of isolated globules will still eventually collapse due to their previous compression. Star formation in other globules,in other regions of the sky,has also been found and are briefly discussed.