Introduction: It is well known that many YSO's show evidences of mass loss as well as outflows and jets and blueshifted shell absorption lines. As was shown in the work of Mundt [1] shell is accelerated already at distances of 1.1-1.5 $R_\ast$, and analysis of the shell lines is the only possibility to obtain information about the stellar wind properties in such a small scale. On other hand many YSO’s are associated with cone-like reflection nebulae as in the prototype object NGC2261. Just in NGC2261 it was for the first time discovered the negative shift of the absorption lines velocity in the reflection spectrum with the increase of the distance from the source star R Mon [2,3]. To explain this effect Jones and Herbig [4] proposed a model of the latitude-dependent expansion of the circumstellar shell. At the circumpolar latitudes the wind velocity is maximal and decreases in the direction of the equatorial latitudes. This effect allows to study a mass loss anisotropy very close to the stellar surface. Such results can be important in the modelling of collimated flows from YSO’s. In this paper we present the integral field spectroscopy of the three reflection nebulae associated with young stars.

Observations: Observations were carried out on 2.6m telescope of Byurakan Observatory (Armenia) using multi-pupil spectrograph VAGR [5] in 11-12 October 2004 (PV Cep, Parsamian 21), 5 May 2005 (RNO 129). The spectra-images were obtained in high-resolution mode with 1800g/mm holographic volume-phase grism. As a detector the Loral 2K×2K CCD was used. The field of view of the spectrograph was 40′′, with a scale of 1″ for the pupil. To avoid overlapping of the spectra, a narrow band filter ($\lambda_c=6560\AA, \Delta\lambda=85\AA$) centered on H$\alpha$ line was used.

Data reduction was done with the ADHOCw package developed in Marseille observatory. The individual spectra from spectra-image were subtracted and after the wavelength calibration stored in the resulting data cube. For wavelength calibration the neon lamp was used. Radial velocities of the emission and absorption lines were computed by Gauss fitting in each spectrum.

Results: For the all three cases the shift of H$\alpha$ absorption component with the increase of a distance from the source was observed. In PV Cep and Parsamian 21 reflection fans the almost linear increase of the velocity is detected but in the case of RNO 129 the behavior of the velocity is more complex and somewhat similar to NGC2261 (as it was described in its subsequent studies [6]). In RNO 129 the negative velocity of absorption decreases near the source till to distance of 2″ and only after this distance we observe a linear increase of the velocity. Below we shortly describe each of these objects.

PV Cep: PV Cep is a HAeBe young star identified with IRAS 20453+6746 [7] source and associated with the variable bipolar reflection fan GM1-29 [8]. Besides, PV Cep is the source of giant Herbig-Haro flow [9] with size of 2.6 pc. In
the position of the HH jet the Hα line is split in the two emission components. By the Gaussian fitting of the components the high velocity component, which belongs to jet, was separated. This allows us to restore the image of jet. To avoid the influence of the jet emission we excluded the regions of jet from the analysis of the Hα absorption. Taking into account only the positions with pure reflection spectrum, we found after the Gaussian fitting of the absorption component the negative increase of its radial velocity depending on the distance of the source (Fig. 1, upper panel).

**RNO 129:** The nebulous object RNO 129 [10] is located in the most northern of all known compact star-forming regions: in the dark cloud L1228 in Cepheus at the distance of 300pc [11].

As in the case of PV Cep, the two HH emission knots were found embedded in the reflection nebula [12]. But no split of the Hα emission was observed and HH knots were found in forbidden emissions of [NII] and [SII] [12]. On the other hand, strong variations of the velocity of Hα absorption component were found in the reflected spectrum (see Fig. 1, middle panel). We see the bend in this dependence, similar to the case of NGC2261 [6].

**Parsamian 21:** This is a bright, compact cometary nebula associated with YSO and located in a small dark cloud in Aquila [13]. The spectroscopic and far-infrared properties of the illuminating source are characteristic for a FU Orionis type object. This star is also a driving source of the bipolar outflow [14]. To avoid the emission of the outflow we built the position-velocity diagram in the western edge of the reflection nebula. in Parsamian 21 the absorption of Hα line is more complicated: starting from the distance of 6″ the second absorption component appears. This complex profile of Hα absorption also is typical for FU Orionis-like objects. In any case, the source probably underwent multiple mass-loss events with different velocities which was the reason to take in account for our diagram only the inner part of the nebula (Fig 1, lower panel). This work was mainly supported by INTAS grant 03-51-4838 and by grant of CRDF/NFSA T AS 062-02/CRDF 12009.

**References:**