



**5-th Gamow Memorial International Conference
dedicated to 111-th anniversary of George Gamow**

**ASTROPHYSICS AND COSMOLOGY AFTER GAMOW:
PROGRESS AND PERSPECTIVES**

and

**15-th Odessa International Astronomical Gamow Conference-School
ASTRONOMY AND BEYOND: ASTROPHYSICS,
COSMOLOGY, COSMOMICROPHYSICS, ASTROPARTICLE
PHYSICS, RADIOASTRONOMY AND ASTROBIOLOGY**



PROGRAM AND ABSTRACTS

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CREATION OF LARGE CATALOGUES BY USING OF VIRTUAL OBSERVATORIES

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We developed an application program to search images in the registers and databases of Virtual Observatories and to download them to local computer. The program has the ability to process XML file in VO Table format to generate links to images, as well as to work directly with the astronomical servers. To improve the efficiency for downloading of large number of images, we used multi-threaded mode. The program runs under the Windows operating system. Using the program in 2014 year, we found and downloaded more than 145 thousand of images of open clusters, having total volume of about 300 GB. Total download time was about 7 days. To process the downloaded images, we created and configured a complex of 10 virtual machines on two PCs for parallel image processing by using Astrometrica program. Total processing time was about 14 days. An application program was also created to analyse the obtained results, which were used to create four catalogues of stellar coordinates at the average epoch of 1953 to 1998. The total number of stars in the catalogues is more than 35 million. The standard error is 0.04" to 0.07", and the average number of observations is 4 to 6. The catalogues are used to improve proper motions of stars in and around of open clusters.