What's New in CASPER ?

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We present some of the new open source radio astronomy instruments, hardware, gateware, GPUware, and software developed by the CASPER collaboration, including new ADC and FPGA boards, heterogeneous correlators, spectrometers, and pulsar instrumentation, as well plans for next generation CASPER tools and libraries.

CASPER (Collaboration for Astronomy Signal Processing and Electronics Research), has developed architectures, open source hardware, software, programming tools, libraries and reference designs for developing high performance digital signal processing instrumentation.

CASPER utilizes commercial 10Gbit and 40 Gbit ethernet switches to interconnect open source general purpose ADC and FPGA boards with CPU's, GPUs and software modules. CASPER's asynchronous packetized design solves the large-N correlator and large-N beamformer interconnect problem.

CASPER's general purpose FPGA/GPU/CPU computing hardware can be purchased at the last minute, and upgraded and scaled as an array grows, similar to purchasing and growing a computer cluster.

CASPER collaborators at hundreds of universities, government labs and observatories have used these techniques to rapidly develop and deploy a variety of correlators, beamformers, spectrometers, pulsar/transient machines, SETI and VLBI instrumentation.   CASPER instrumentation is also utilized in physics, medicine, genomics and engineering.

Open source source hardware, software, libraries, tools, tutorials, training videos, reference designs, and information on how to join the collaboration are available at http://casper.berkeley.edu