Galaxy cluster at $z = 4.1$

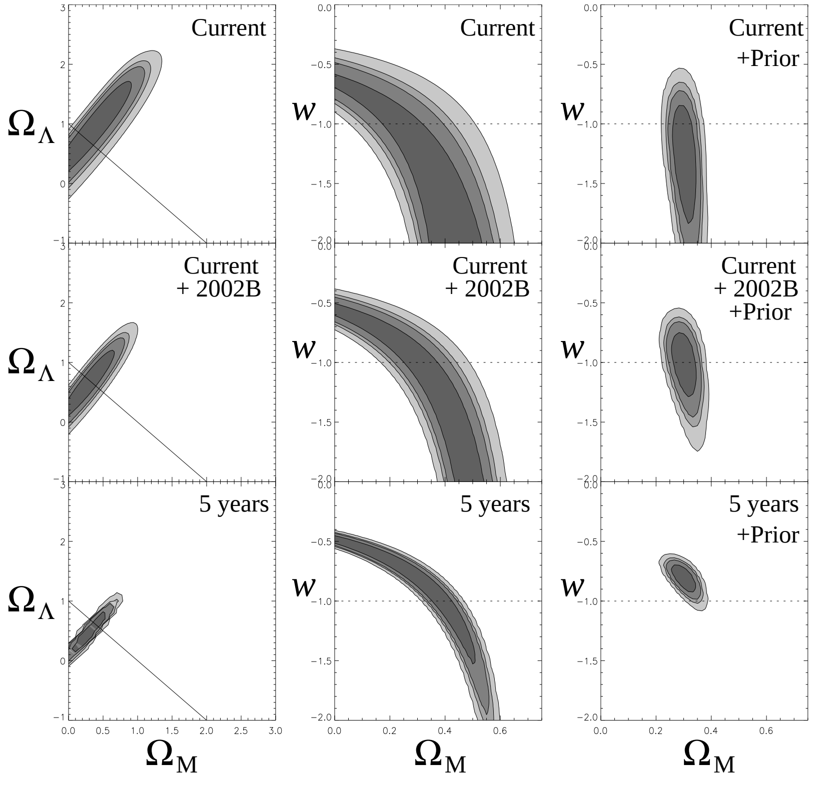

Figure 1: Simulated 68%, 90%, 95%, and 99% confidence limits on cosmological parameters from supernovae observed with this program. On the left are confidence limits in the Ω_M/Ω_L plane; other plots show confidence limits on Ω_M and the equation of state paramter w for the dark energy in a flat universe. On the right is included a 0.3 ± 0.04 prior on Ω_M, which simulates what may be available from independent measurements in five years. The top plots show the SCP's current best limits, including those from Perlmutter (1999) and from 10 supernovae discovered at CTIO and followed with WFPC-2 (Knop et al 2002). The middle plots add 65 SNe from TRSS in 2002B (including $\sim$ 30 observed spectroscopically with this program) plus four SNe at $z \sim 1.05$ (including those in hand and those to be observed with this program). The bottom plots show the potential situation in 5 years: 330 SNe at $z < 0.7$ from TRSS, plus 12 SNe at $z \sim 1.05$, plus 300 nearby supernovae produced by the Supernova Factory (Aldering & Pain 2001).

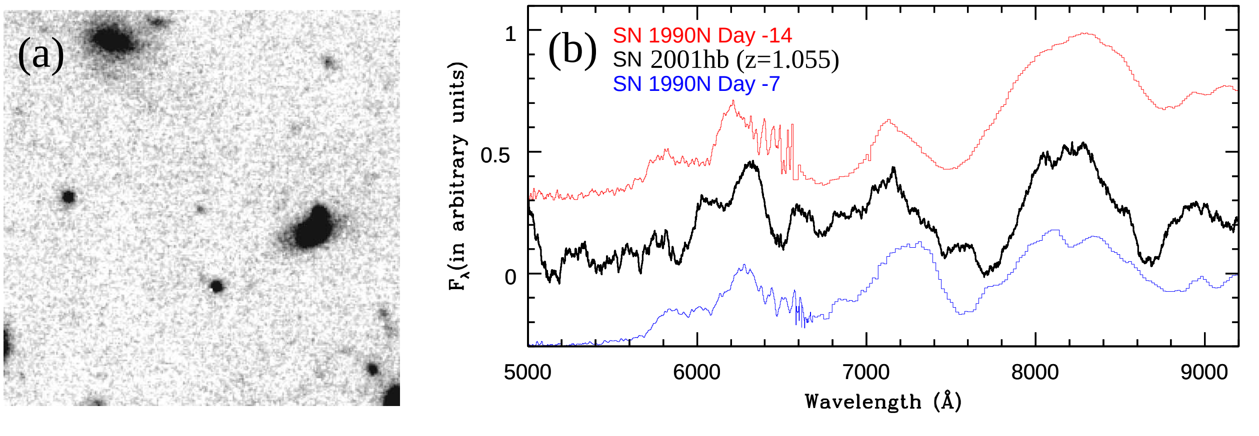

Figure 2: (a) $30'' \times 30''$ section of our NIRI image centered on SN2001hb at $z = 1.06$, discovered with CTIO/MOSAIC during semester 2001A. The combined NIRI image of $\sim$ 12 hours data reaches a signal to noise of about 14. (b) Spectrum of SN2001hb obtained in 2 hrs with ESI on Keck, smoothed to 155A, and compared to the nearby template SN1990N.

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