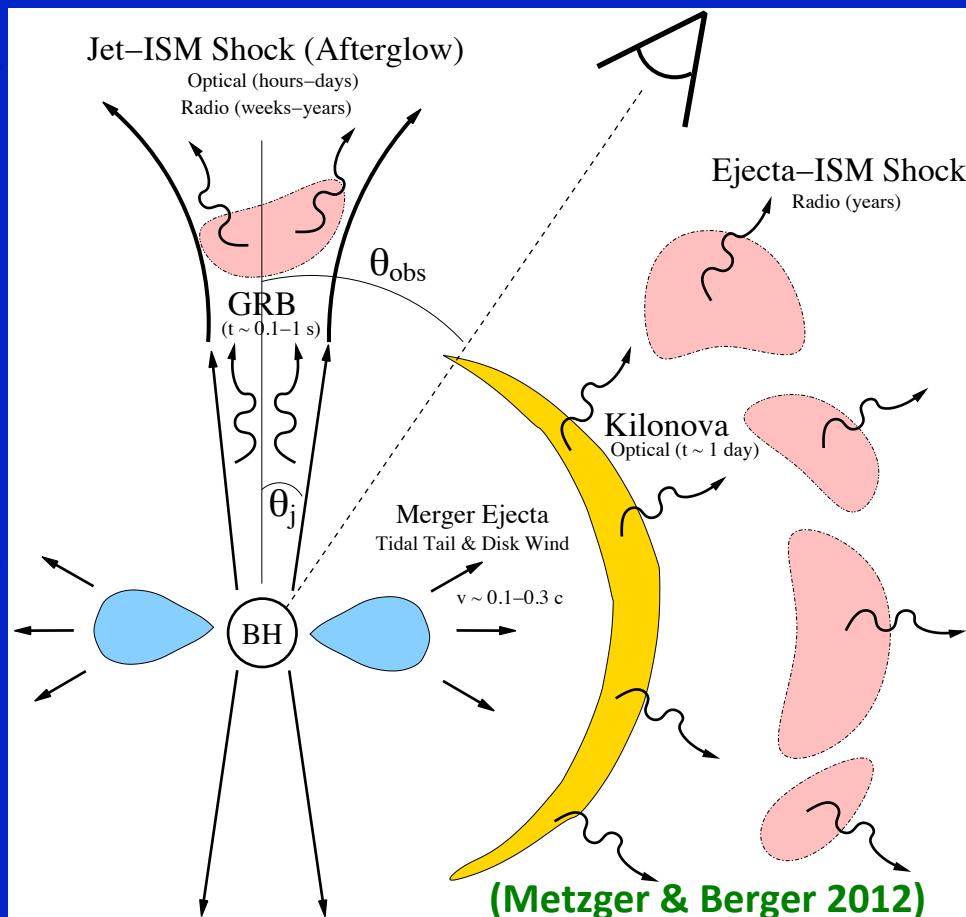
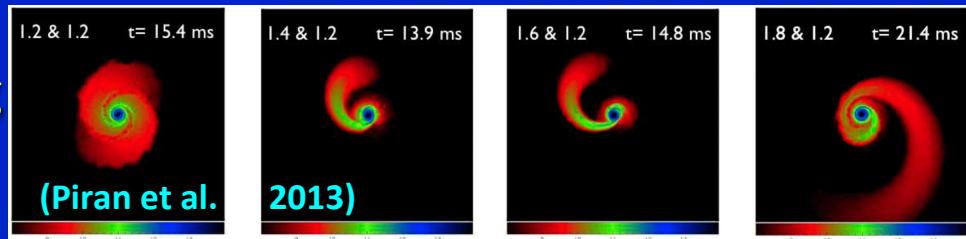


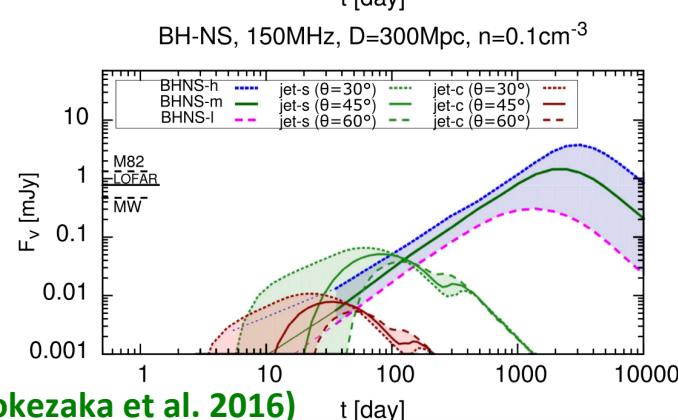
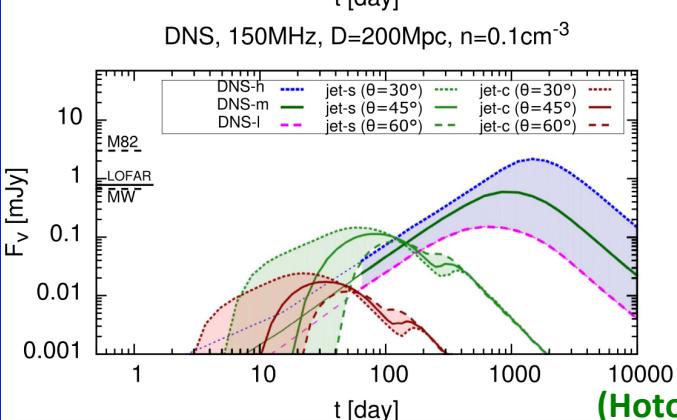
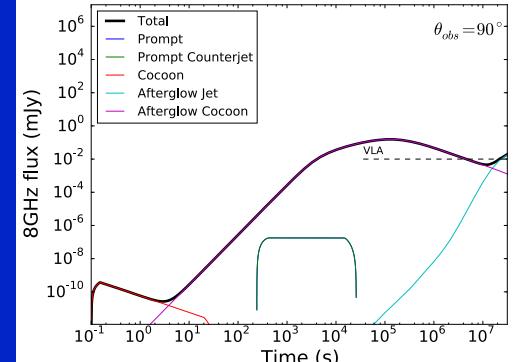
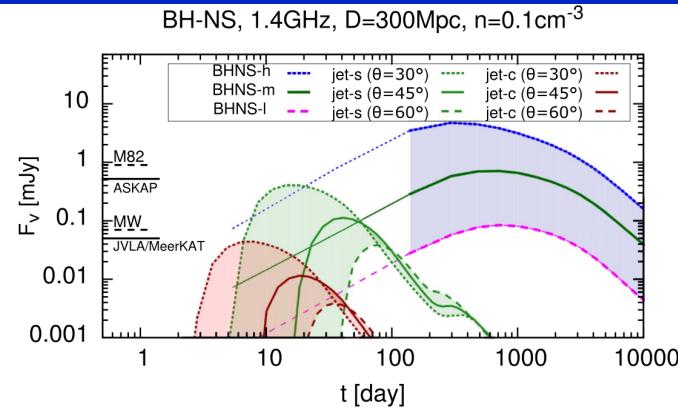
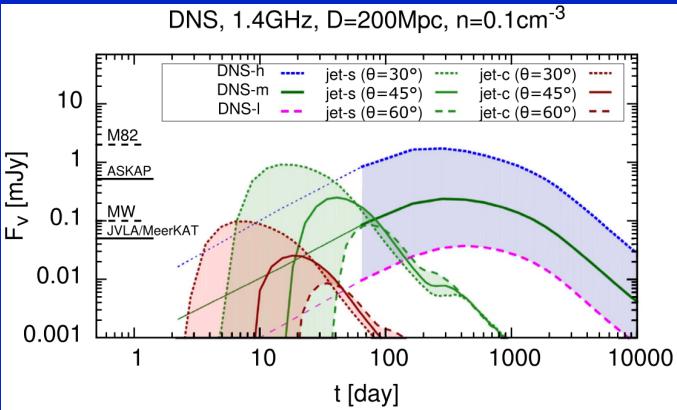
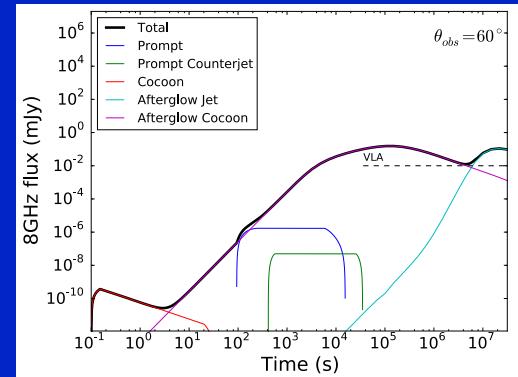
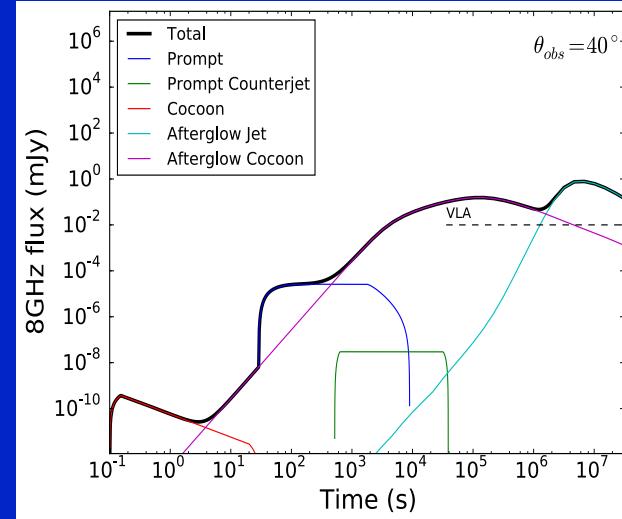
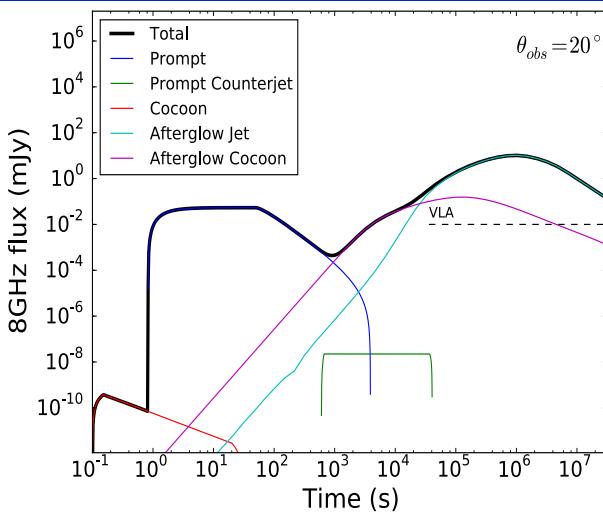
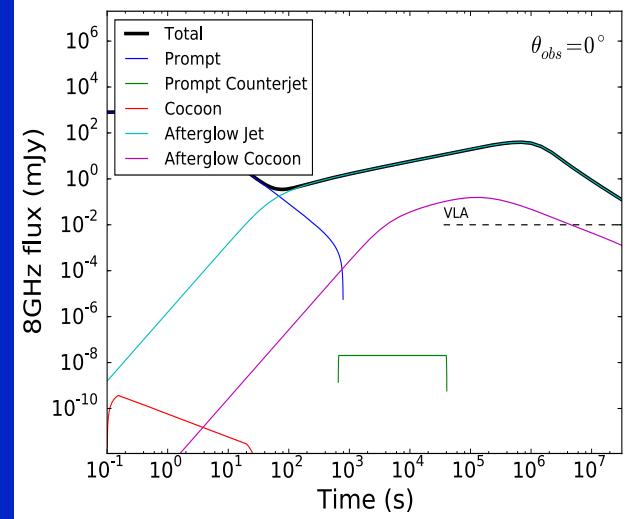
Radio Emission from NS-NS/BH Mergers

- Newtonian ejecta along equator
 $\beta \sim \frac{1}{3}$, $M/M_\odot \sim 10^{-3} - 10^{-2}$, $E \sim 10^{50-51}$ erg
 $t_{\text{dec}} \sim 1.7(E_{50}/n_0(3\beta_0)^5)^{1/3}$ yr
 $F_{v,\text{pk}} \sim 0.15E_{50}(\epsilon_{B,-1}n_0)^{(p+1)/4}(3\beta_0)^{(5p-7)/2} \times \epsilon_{e,-1}^{p-1} D_{27}^{-2} (v/1.4 \text{ GHz})^{(1-p)/2} \text{ mJy}$
- Relativistic jets viewed off-axis
 $t_{\text{peak}} \sim 70(E_{51}/n_0)^{1/3}\theta_{\text{obs}}^2$ days
 $F_{v,\text{pk}} \sim 0.5E_{49}(\epsilon_{B,-1}n_0)^{(p+1)/4}\theta_{\text{obs}}^{-2p}D_{27}^{-2} \times \epsilon_{e,-1}^{p-1} (v/8.5 \text{ GHz})^{(1-p)/2} \text{ mJy}$
- Relativistic shock breakout from colliding NSs (Kyutoku et al. 2014)
- Cocoon emission from jet boring its way through the merger-wind: optical-UV (Gottlieb et al. 2017)
- Kilonova: NIR, optical, near UV



Predictions:

(Lazzati et al. 2017)



(Hotokozaka et al. 2016)

Radio Emission from Relativistic Shock Breakout

- Relativistic shock breakout from binary neutron stars as they collide before merger

