

## Supplementary material

**Fig. S1.** (Color online) Temperature dependent resistance, R(T, P), measured in compressed single crystal La<sub>3</sub>Ni<sub>2</sub>O<sub>7</sub> (Run 2) and data fits to Eq. (1). Raw data reported by Sun et al [11].  $R_{sat} \rightarrow \infty$  for all fits. Green balls indicate the bounds for which R(T) data was used for the fit to Eq. (1). Fit quality for all panels is better or equal to 0.9999. 95% confidence bands are shown by pink areas. P=18.9 GPa (a); P=22.2 GPa (b); P=25.6 GPa (c); P=29.1 GPa (d); P=33.2 GPa (e); P=37.2 GPa (f); P=43.5 GPa (g).



**Fig. 52.** (Color online) Temperature dependent resistance, R(T, P), measured in compressed single crystal La<sub>3</sub>Ni<sub>2</sub>O<sub>7</sub> (Run 3) and data fits to Eq. (1). Raw data reported by Sun et al [11].  $R_{sat} \rightarrow \infty$  for all fits. Green balls indicate the bounds for which R(T) data was used for the fit to Eq. (1). Fit quality for all panels is better or equal to 0.9997. 95% confidence bands are shown by pink areas. P = 22 GPa (a); P = 28.6 GPa (b); P = 33.2 GPa (c); P = 36 GPa (d).



**Fig. S3.** (Color online) Temperature dependent resistance, R(T, P), measured in compressed single crystal La<sub>3</sub>Ni<sub>2</sub>O<sub>7</sub> (Run 4) and data fits to Eq. (1). Raw data reported by Sun et al [11]. Green balls indicate the bounds for which R(T) data was used for the fit to Eq. (1). Fit quality for all panels is better or equal to 0.9989. 95% confidence bands are shown by pink areas. P=15.1 GPa (a); P=19.5 GPa (b); P=22.5 GPa (c); P=26 GPa (d).



**Fig. S4.** (Color online) XRD peaks breadth,  $\beta(\theta)$ , fits to reduced Williamson-Hall model (Eq. (9)) for highly compressed single crystal La<sub>3</sub>Ni<sub>2</sub>O<sub>7-8</sub>. Raw XRD scans reported by Sun et al [11]. 95% confidence bands are shown by pink areas. *P*=1.6 GPa (a); *P*=4.9 GPa (b); *P*=10.1 GPa (c); *P*=15.1 GPa (d), *P*=20.8 GPa (e); *P*=24.9 GPa (f); *P*=29.5 GPa (g); *P*=36.5 GPa (h), *P*=41.2 GPa (i).