Logic 1, WS 2004. Homework 6, given Dec 02, due Dec 09

Prove in informal style, using the basic properties of sets and the inference rules which you consider appropriate:

$$\mathcal{P}(A) = \{P | P \subseteq A\}$$

iff

$$\mathcal{P}[\emptyset] = \{\emptyset\} \ \wedge \ ((A\neg = \emptyset) \Rightarrow (\forall_{a \in A} \forall_P (P = \mathcal{P}(A \setminus \{a\}) \ \Rightarrow \ \mathcal{P}(A) = P \cup \{B \cup \{a\} | B \in P\}))).$$