**Introduction:** Achondrites are igneous rocks which record the earliest epoch of planetesimal melting and differentiation [1]. Studying the chronology of achondrites is vital to understanding the timeline of accretion, differentiation, and subsequent reheating of planetesimals [2]. We present here a status report of an ongoing project to constrain the high resolution chronology of igneous processes on a variety of achondrite parent bodies.

**Samples and Methods:** Thus far, we have investigated the high resolution chronologies of 1) 2 primitive achondrites, the brachinites Brachina and North-west Africa (NWA) 4882, 2) 2 eucrites, Juvinas and NWA 10919, and 2 anomalous eucrites, NWA 4470 and Sayh al Uhaymir (SaU) 493, and 3) 2 ungrouped differentiated achondrites, NWA 7325 and NWA 11119. We have applied several high precision chronometric techniques (including Al-Mg, Mn-Cr and Pb-Pb) to these achondrites; analytical details can be found in recent abstracts and papers referenced throughout this abstract.

**Discussion:** Ages obtained with different chronometers on various achondrites will be discussed in terms of the crystallization ages representing formation times, model ages representing the timing of silicate fractionation/partial melting on the parent bodies (these typically make the assumption of a chondritic parent body composition), and resetting (or upper limit on) ages where the chronometer was reset by a later heating (possibly impact) event.

**Primitive Achondrites:** Investigations of the $^{53}$Mn-$^{54}$Cr systematics of two Brachinites (Brachina and NWA 4882) reveal that Brachina has an ancient crystallization age of 4564.8 ± 0.3 Ma [3] while NWA 4882 is ~15 Ma younger [4]. This indicates that the Brachinite parent body experienced a prolonged thermal history. The $^{26}$Al-$^{26}$Mg model ages for these brachinites indicate that partial melt removal occurred at ~4567 Ma [5] on their parent body. The younger $^{53}$Mn-$^{54}$Cr age of NWA 4882 likely resulted from late thermal metamorphism.

**Eucrites:** The eucrites Juvinas and NWA 10919 as well as the anomalous eucrite NWA 4470 and the ungrouped achondrite SaU 493 (which we consider to be an anomalous eucrite; [6]) have been investigated using $^{26}$Al-$^{26}$Mg systematics. All four these samples have equilibrated $^{26}$Al-$^{26}$Mg systematics and as such, only provide upper limits of ≤ 4561 Ma on their formation/equilibration times. [5,7,8]. On the Eucrite parent body, this equilibration is likely the result of thermal metamorphism resulting from a large impact. The weighted mean $^{26}$Al-$^{26}$Mg model age for these samples is $4565 \pm 1$ Ma indicating that silicate differentiation occurred early and concurrently on their parent body(ies). These results agree with the findings of [9].

**Ungrouped Differentiated Achondrites:** The NWA 7325 and NWA 11119 ungrouped achondrites have compositions quite distinct from other known types of achondrites. Their mass-independent O and Cr isotope compositions indicate that they likely originated on a common parent body [10,11]. The $^{26}$Al-$^{26}$Mg and Pb-Pb ages of NWA 7325 are concordant and give a crystallization age of ~4563 Ma [8,12]. The $^{26}$Al-$^{26}$Mg and Pb-Pb ages of NWA 11119 are also concordant and give a crystallization age of ~4564 Ma [10,13]. NWA 11119 has a unique andesite-dacite bulk composition and has the most amount of free silica of any known achondrite [10]. The fact that this evolved crustal rock was forming so early (within ~3 Ma of CAIs [14]) has important implications for our understanding of crustal processing on planetesimals in the early Solar System.

**Summary:** The findings discussed here provide critical constraints on the differentiation and subsequent evolution of achondrite parent bodies in the early Solar System. Accretion and melting of various planetesimals began almost contemporaneously with CAI formation, and crystallization of crustal rocks followed within ~3 Ma of CAIs. Evolved, high-silica crustal compositions are possible on some planetesimals and their formation occurred concurrently with the earliest basaltic crusts. Thermal metamorphism (most likely from impact heating) caused prolonged thermal histories that spanned up to ~20 Ma after parent body accretion.