The frequency-size scaling of non-volcanic tremors beneath the San Andreas Fault at Parkfield: Possible implications for seismic energy release

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Key points:

- The non-volcanic tremor frequency-magnitude distribution follows a power law scaling
- The combined analysis of *b*-values of earthquakes and NVTs as function of depth mirrors the lithospheric strength gradient
- Non-volcanic tremors might contribute significantly to the plate motion budget

We analyse the frequency-size-distribution of non-volcanic tremors observed along the Parkfield section of the San Andreas Fault. We suggest that these non-volcanic tremors follow a power-law scaling typical of scale-invariant, stick slip tectonic earthquakes, but with an unusually high scaling exponent of more than 2.0 and a systematic depth-dependency. While each individual non-volcanic tremor releases only a minuscule amount of energy and slip, this is more than compensated by their sheer numbers. Consequently, the integrated contribution of this largely 'invisible' seismicity (non-volcanic tremors and nano-earthquakes)

is non-negligible and could potentially account in selected patches along the San Andreas fault for up to 100% of the plate motion.

1. Introduction

Plate motion along active fault zones is easily observable geodetically from the far-field; however, the partitioning of this motion into seismic and aseismic components is more challenging to describe with geodetic or seismic observations. Observations for the seismogenic crust range from continuous surface creep and abundant microseismicity to inter-seismic locking and rare large earthquakes. At greater depths, tectonic plates are generally assumed to move aseismically and continuously (Murray and Langbein, 2006). In California, the Pacific and the North American plates move past each other at a velocity of about 45mm/yr (Bakun and Lindh, 1985; DeMets, 1994). About 70-80% is accommodated by the right-lateral strike-slip San Andreas Fault (SAF, Figure 1) system, known for a complex heterogeneity of fault motion regimes (Bakun and Lindh, 1985; Titus et al., 2006; Tong et al., 2013). The northern and southern segments are currently fully locked throughout the seismogenic depth, and break in major earthquakes about every 150 years (e.g. the 1906 San Francisco earthquake in the north and the 1857 Fort Tejon earthquake in the south, with magnitudes close to M8). However, in between those segments, along the so-called creeping section, as much as 25-40mm/yr of movement is observed at the surface as creep (for the purpose of calculations in this study we apply an average estimate of 35 mm/yr; DeMets et al., 2010). This segment also produces abundant micro-seismicity. The southern transition zone between the fully locked and creeping segments, the Parkfield segment, regularly (~20-40 years) produces M6 earthquakes. This fault section has long been recognized as an ideal natural laboratory for studying crustal fault phenomena (Bakun and Lindh, 1985). It is densely instrumented and is therefore an ideal study region for investigating the role of nano-earthquakes (loosely defined here as events below magnitude zero) and non-volcanic tremors (NVTs) in moving plates.

Just south of the Parkfield rupture zone the plate motion below the seismogenic depth on the SAF is

accompanied by abundant and deep NVT activity (Nadeau and Dolenc, 2005), distributed in a 3D cloud around the Moho and down into the upper mantle (Figure 1). Unlike earthquakes, tremor waveforms usually do not contain any clear P- or S-arrivals and have a significantly longer duration, i.e. in this region (Cholame) they last from 3-25 minutes (Nadeau and Guilhem, 2009). As a result, they have, until recently, proven difficult to quantify in terms of both location and magnitude. Recently however, an updated detection algorithm and systematic spectral waveform analysis on borehole seismometer data showed that the events are best described using energy magnitudes (M_e) (Staudenmaier et al., 2016). NVTs are long in duration but very small in amplitude, rendering them more challenging to detect with seismic instrumentation compared to tectonic earthquakes (Figure 1), and thus also making it more difficult to establish the effect of incomplete recording. The scaling properties of NVT and their potential contribution of NVTs to the overall strain budget of plate motions has not been studied intensely. Watanabe et. al (2007) analysed the scaling of tremor events in the Tokai region (Japan) and Chestler and Creager (2017) analysed the scaling of low-frequency-earthquakes beneath the Olympic Peninsula; both studies suggested that their scaling follows an exponential distribution. Here we explore as an alternative explanation power-law scaling.

In this study we first analyse the frequency-magnitude scaling of NVTs in the Cholame region and then discuss their implications for seismic energy release. The relationship between the frequency and magnitude of earthquakes is one of the most fundamental observations in seismology, described by the empirical relationship $\log(N)=a-bM$, where N is the number of events equal or above magnitude M, and a and b are constants (Gutenberg and Richter, 1944). This relationship is commonly used to derive the recurrence rates of rare large events by extrapolating from the rate (a-value) and size distribution (b-value) of abundant small to moderate seismicity. Studies based on laboratory data and seismic observations have established an inverse relation between applied differential stress and the relative size distribution of earthquakes, suggesting the potential for b-values to act as a remote stress-meter in the Earth's crust (Amitrano, 2003; Scholz, 2002; Scholz, 2015; Spada et al., 2013, Schorlemmer and Wiemer, 2005; Tormann et al., 2015; Gulia et al., 2018). Alternative parameters that have been

78 suggested to have an impact on *b*-values are material properties and heterogeneity, as well as fluids
79 and fracture toughness (Mori and Abercrombie, 1997; Sammonds et al., 1992).

80

81 **2. Data and methods**

82 Estimating reliable tremor magnitudes is challenging. Based on carefully designed workflows, energy
83 magnitudes could be obtained for the Cholame tremors by Staudenmaier et al. (2016), and they also
84 proposed a relationship to estimate energy and moment magnitude of tremor events from their
85 respective duration, peak amplitude and spectral velocity (measured at the spectrum's corner
86 frequency). We apply this relationship to all class A (reliable location) and class B (unreliable
87 location) events in the TremorScope catalogue (Nadeau and Guilhem, 2009) and account for the class
88 C (detected) tremors by upscaling the total occurrence rate accordingly. We then calculate M_w for a
89 consistent set of ~3500 tremor events between 2001 and 2016, using the relation between seismic
90 moment M_0 and energy content E_s (Choy and Boatwright, 2002), assuming a constant stress drop of
91 10kPa (Staudenmaier et al., 2016). The location of the events used are shown in map view and cross-
92 section in Figure 1.

93

94 For calculating the b-value, we used the maximum likelihood method derived by Aki (1965) and the
95 standard error following Shi and Bolt (1982). For mapping b-values along the cross section of the fault
96 we followed the standardized methods developed in a number of case studies (e.g., Wiemer and Wyss,
97 1997; Wiemer and Wyss, 2002; Tormann et al., 2012; Tormann et al., 2014) First we selected a plane
98 vertical grid centered on the fault trace with 1 km spacing and projected all earthquakes that are
99 located inside a chosen swath either side of the fault trace (width of 5 km) onto this grid. A minimum
100 number of events, Nmin, of at least 50 events was set as a requirement for b-value calculation. The
101 more events a data sample includes, the more robust is the analysis. For each grid we derived a local
102 b-value. For mapping *b*-value with depth, we applied a moving window with 150 events through depth
103 (1-event-steps, Spada et el., 2013).

104

105 **3. Results and Discussion**

Figure 2 shows the resulting frequency-magnitude-distribution (FMD) of NVT, with a magnitude range from M_w 0.44 to 2.7 and binned in 0.01 magnitudes units (black squares). We find that above the magnitude of completeness estimated to about M_c= 1.6 (M_w) when using the mode of the FMD (Woessner and Wiemer; 2005; Mignan, 2012), the data roughly follows a straight line in log-linear space, in agreement with the Gutenberg-Richter law of earthquakes. Below Mc, the data shows a broad curvature in line with the expectation of strong spatial and/or temporal changes in completeness (Mignan et al., 2011). Wiemer and Wyss (2000, 2002) discussed already in detail how changes in completeness will impact the FMD and can be misinterpreted as breaks in scaling.

The Gutenberg-Richter law would infer a power-law scaling in the frequency-energy domain. However, an exponential scaling had been suggested by Watanabe et. al (2007) and Chestler and Creager (2017). We tested whether or not the frequency-energy distribution follows a power-law or an exponential function. To do so, we first converted our M_e estimates back to seismic energy via Eq. 4 of Staudenmaier et al. (2016): Me = 2/3(log10(E)-4.4). We then compared a power-law model to a stretched exponential model, which is a generalization of the exponential model. Our approach is based on the one of Clauset et al. (2009) where models are fitted using maximum likelihood estimation and compared using the Akaike Information Criterion (AIC) (see Mignan (2015) for an early application to seismicity). We first had to estimate the minimum cutoff E_{min} above which the model is valid. We used the power-law as null-hypothesis and obtained E_{min} = 95,500 based on a Kolmogorov-Smirnov test (as given, also, in Clauset et al., 2009). We obtained the following results for $E \geq E_{min}$:

- Power-law model: log-likelihood = -3312.261, power-law exponent = 3.07
- Stretched exponential model: log-likelihood = -3313.779, stretching parameter = 0.2

Since the stretched exponential has two parameters, while the power-law model only one, we also calculated the AIC. We obtained AIC = 6626 for the power-law and AIC = 6631 for the stretched exponential. These results confirm that the power-law is the preferred model above E_{min}. Results are shown also in Figure 2, represented in the form of the complementary cumulative distribution of E. The power-law model is shown in red and the stretched exponential model in blue. The log-likelihood difference between the 2 models is small but confirms that the distribution is heavy-tailed. Indeed, the

stretching parameter is 0.2 while it would be 1 for a pure exponential function. So, we can conclude that the distribution clearly does not follow an exponential function. Whether the distribution truly follows a power-law, or a stretched exponential, would require more data and such analysis is outside the scope of the present paper.

We believe based on this analysis that there are three lines of evidence suggesting that the NVT scaling follows a power-law: 1) The data above completeness follows a power-law in energy domain and passes a statistical test; 2) power law scaling has been shown to be quite omnipresent in earthquake scaling of all sizes, down to very small magnitudes, and there is no evidence to suggest that NVT should behave differently. However, we acknowledge that we cannot offer ultimate proof of power-law scaling, which is a critical assumption for some of the extrapolation and energy balancing presented below. We will continue acknowledging this limitation in a 'what if' thought experiment, and discuss the limitation again in the final section.

Power-law scaling is indicative of a scale invariant process and of stick-slip motion, and observed almost universally for tectonic earthquakes and for earthquakes in the region (purple and green). However, we find that the slope of the power law, the *b*-value (b=2.5) of the NVT FMD is considerably higher than usually observed for tectonic earthquakes. Such high *b*-values have typically been reported in the literature only for non-tectonic seismicity, for example in volcanic (Wiemer and Wyss, 2002; Roberts et al., 2016), in fracking related seismicity (Davies et al., 2013) or under high pore pressure conditions (Bachmann et al., 2012).

We now analyse the frequency-magnitude scaling of earthquakes and NVTs in greater detail. As a first step, we map the spatial distribution of *b*-values (Figure 1, bottom), estimated from the nearest 150 neighbouring events with maximum radius of 5km and a minimum of 50 events, on a 1x1km spaced grid. Our analysis confirms and extends the spatial pattern of *b*-values observed in previous studies (Wiemer and Wyss, 1997; Schorlemmer and Wiemer, 2005; Tormann et al., 2012; Tormann et al., 2014). While the Parkfield M6 asperity exhibits very low *b*-values (b<0.7), the creeping section is

characterised by average to unusually high *b*-values ($0.8<b<2$). However, the scaling exponent of NVTs below the seismogenic depth, with $2<b<3.5$, is much higher. In Figure 3, we compare the FMDs for the asperity volume (Tormann et al., 2012), the creeping section, and the NVT section, illustrating that while all three FMDs are well described by a power-law, the exponents differ substantially.

3.1 Correlating lithospheric strength and *b*-values

Strength and applied differential stresses increase through the brittle upper crust down to the bottom of the seismogenic zone (at ~10km in the Parkfield region (Platt and Behr, 2011; Strehlau and Williams, 1998; Molnar, 1988; Sibson, 1982)). Below and down to the Moho discontinuity, crustal strength is limited through the ductile load limit, and strongly decreases with increasing temperature. Spada et al. (2013) and Scholz (2015) showed that indeed the *b*-value-depth profiles in seven regions from around the globe are consistent with this strength model, with *b* decreasing down to the brittle-ductile transition zone, then increasing again until seismicity dies out entirely. In our extended analysis that includes NVTs (Figure 4b), we show that this first-order gradient is observed in a similar way for both the primarily locked as well as the primarily creeping parts of the SAF. Importantly, our analysis of tremor FMDs (Figure 4b) suggest that *b*-values continue to increase below the seismogenic depth to the Moho, which at Parkfield is located at a depth between 21-25km (Platt and Behr, 2011; Scholz, 2002). The highest *b*-values of up to 3.5 are observed near the Moho. This continued increase is fully consistent with the decreasing strength of the material (Figure 4a). Below the Moho, *b*-values decrease again, consistent with the anticipated increase in material strength of the chemically and rheologically different rocks in the upper mantle. In summary, our combined analysis of *b*-values of tectonic earthquakes and NVTs as a function of depth consistently mirrors the lithospheric strength gradient. To our knowledge, this is the first documentation of an 'in situ' observation that measures this theoretically expected differential strength profile.

3.2 Implications for seismic energy release

The total seismic energy per square kilometre released by all earthquakes or NVTs within a given magnitude range is defined as (Kanamori, 1977; Hanks and Kanamori, 1979):

$$E_{seis} = \sum_{M_{w,min}}^{M_{w,max}} N(M_w) * [E(M_w) \approx \frac{\Delta\sigma M_0(M_w)}{2\mu}], where\ N = 10^{a-bM_w}\ and\ M_0 = 10^{1.5M_w+9.1} \quad (1)$$

The total seismic slip over area *A* is defined as:

$$D = \frac{\sum_{M_{min}}^{M_{max}} N(M_w) * M_0(M_w)}{\mu A},\ where\ \mu = 3.3 \cdot 10^{10}\ Pa \quad (2)$$

Note that for fault-size and energy conservation arguments the summation has to be band-limited at both the lower and upper end of the magnitude scale. These fundamental equations are commonly used in seismic hazard assessment and tectonic modelling. However, they are typically employed in tectonic regions (b<1.5). To clarify, equation 1 states that for a *b*-value of 1.0 earthquakes one magnitude larger are 10 times less frequent but release 32 times more energy. In these conditions, seismic energy is almost entirely released by the few large-magnitude events, while abundant M_w<2 seismicity accounts for an insignificant amount. Thus, the maximum event size critically determines the total seismic energy budget. For *b*>1.5 this energy distribution is reversed, more energy is released in the countless small events than in the infrequent large ones. Here, the seismic energy budget critically hinges on the lower threshold M_{min}. Figure 3 (inlet) illustrates this distribution of energy contribution for different *b*-values. A *b*=2.0 implies observing 100 times more events for a unit step decrease in magnitude.

It has been argued that *b*-values cannot exceed 1.5 because most energy would be released by small events (Olsson, 1999). We claim that, in fact, *b*-values can be significantly greater than 1.5 as previously documented and seen here for NVTs and selected patches of the brittle zone (Figure 1), and argue that high *b*-values are indeed physically meaningful and important indicators of a regime where seismic energy release is dominated by 'invisible' or undetected events with M<0. 'Invisible' due to the fact, that we are not (yet) able to reliably record them instrumentally based on their very high corner frequencies and sensitivity to signal-to-noise resolution.

In our conceptual model, plate motion can be accommodated in:

1) **Locked-Asperities (S_L):** In asperities (partially or even fully locked zones of faults), plate motion is largely accommodated through the largest earthquakes that occur with inter-event

times of decades or centuries. The Fort Tejon segment of the SAF south of Parkfield is an example of such a system. Note that such segments can be largely aseismic in the inter-event period, or highly seismic, such as the Parkfield asperity itself.

2) **Aseismic Creep (S_A):** These fault sections are characterised largely by 'aseismic' creep, steady dislocation creep that sums up to plate motion but does not emit seismic energy and the slip release through time is continuous and not scale-invariant. S_A by definition cannot be observed with seismic methods, but deformation can be measured directly using geodetic methods. We note that temporal changes in aseismic creep rates have been documented and sometimes called 'transient slip' events. In our model they contribute to the long-term average slip rate.

3) **Invisible-Seismic (S_I):** This new category covers areas with *b*-values >1.5, where energy and slip is released in numerous nano-quakes or NVTs, i.e. in distinct brittle failure events, characterised by a size distribution that follows a power law. Because the vast majority of events are too small to be detected by current seismic networks, this energy release is currently 'invisible'. The summed-up slip of all brittle failures taking place with inter-event times of minutes to seconds on any given fault section, appears when monitored from the surface as continuous creep.

Note that these three forms of energy release represent the three end-members. Mixed forms are possible and are observed in our study area (Figure 5). Given the heterogeneity of fault zones, changes from one regime to another are expected to occur on the scale of kilometres. The total slip of any patch on a fault is the sum of the three components and must sum up to plate motion:

$$S_{Total} = S_L + S_A + S_I = 25\text{-}40\text{mm/yr (along the SAF)} \quad (3)$$

We now apply this concept to our study area: To unravel the contribution of tectonic earthquakes, NVTs and creep to seismic energy release and to plate motion, we estimated the average annual seismic slip as a function of depth (Figure 4c) and along the fault (Figure 6c). From the locally observed FMDs (which are normalized per year and km^2), we assessed the total seismic energy release and slip using equations 1 and 2. While estimating the necessary local minimum and maximum

magnitudes is non-trivial (Zöller et al., 2013), we find that a set of few and reasonable assumptions leads – in the Parkfield setting – to physically based magnitude boundary estimates consistent with available independent information (Toke and Arrowsmith, 2006; McLaskey et al., 2014). To derive limits for the extreme events, we separate between regimes of *b*-values below and above 1.5. In both cases, we balance against the total available energy in the system, given by the average plate motion of 35mm/yr.

Locked-Asperity Example (Parkfield): It is known from paleoseismic evidence that the currently locked and aseismic Fort Tejon segment south of Parkfield is capable of producing magnitude 7.7-7.9 earthquakes (Toke and Arrowsmith, 2006), and recurrence rates for such events are estimated to be ~150yrs. The Parkfield asperity segment is believed to have participated in the last Fort Tejon earthquake in 1857, though it has not experienced the maximum slip of up to 9m, as observed along the locked segment, but only up to ~3.5m (Toke and Arrowsmith, 2006). This is consistent with the fact that the asperity is only partly locked, and releases some of the accumulating seismic loading during the inter-seismic cycle of these very large events. A maximum seismic slip of 3.5m is typical for strike-slip earthquakes of magnitude 7.1 (Wells and Coppersmith, 1994). Choosing this as maximum boundary and extrapolating the FMD observed in the asperity volume, we derive a remarkably consistent expected inter-event time of 156yrs (Figure 3). We note that while there is no evidence for any larger events along the southern SAF, and the slip budget suggests this as the maximum necessary event, there is no means so far to exclude the possibility of M8+ events occurring in the future.

Invisible-Seismic Example (Cholame NVTs): For the NVT events, we estimate the maximum magnitude by assuming a tremor affecting the full diameter of the observed tremor cloud, which given the low stress drop (~10kPa) of NVTs results in an M_w3.6 event with a recurrence time of 10’000yrs. To estimate the minimum magnitude, we assume that the smallest possible slip has to equal or exceed the material’s grain size. Olivine and Gneiss grain sizes (Platt and Behr, 2011; Precigout and Stünitz, 2016; Bohnhoff, 2010) are consistent with the slip estimate of $0.7*10^{-6}$m for an M_w-4 event, which we

consequently consider a first-order estimate of the smallest possible magnitude, although this is clearly an uncertainty in our considerations. We note that the rupture area (Eshelby, 1957) of these smallest events would be still surprisingly large with approximately 0.043m^2. Much smaller rupture areas have been observed for nano-earthquakes in the lab, down to source length of 10^{-3} – 10^{-4} m (i.e., source areas of 10^{-6} to 10^{-8} m^2 (Selvadurai, 2019). This could be seen as evidence that even smaller Mw value are conceivable. As a thought experiment, we cumulatively add the contributions for all possible magnitude events from the tremor FMD (Figure 3) and find that if we integration down to a minimum M_w of -4, this would imply that the entire plate motion could potentially be accommodated through NVTs. Over the entire tremor affected areas, this would imply roughly 10^{15} tremors with magnitudes between -4 and 3.6 (Figure 3), which would correspond to roughly two events per minute and per square meter. However, because the width of the shear zone at depth increases greatly (Platt and Behr, 2011), so these events are distributed over kilometres or even tens of kilometres width (Figure 1). While this sounds like an incredibly large number, the slip of the large majority of these events would be on the order of 10^{-8} m. We also note that this number is consistent with laboratory observations of brittle-failure events, where within a sample of some cm^3, tens of thousands of nano-earthquakes can be detected within an hour-long experiment. The tremor Cholame volume we investigate is about a factor of 10^{11}-11^{15} time larger.

Invisible-Seismic Example (Parkfield shallow): at the southern end of the creeping section, tectonic earthquakes form a high-*b*-value patch, with *b*-values up to 2.1 (Figure 1). We determined that here events as small as M_w= -7 would be needed to accommodate the entire plate motion through stick-slip events. The difference to the minimum magnitude obtained for NVTs is mostly due to the higher stress drop of tectonic earthquakes in the more brittle environment. M_w of -7 appears very small, but is still physically reasonable for micro-fracturing, as observed in lab studies (Goodfellow and Young, 2014; Mclaskey et al., 2014; Bohnhoff, 2010).

***A-Seismic Example (Creeping shallow)*:** Approximately 40km further north along the creeping segment, in the upper ~5km the recorded seismicity is less abundant compared to deeper regions

(Figure 1). However, surface creep rate observations still exceed 20mm of continuous motion in this area (Figure 5a), likely measuring aseismic continuous dislocation creep. A possible geological explanation for the rather unusual high-*b*-high-continuous-sliding regime in the creeping segment could be the documented presence of talc in the active trace of the fault. Talc is characterized by stable, velocity-strengthening behaviour and has a very low shear strength in the temperature range 100–400°C (i.e. depth range of 3-14km) (Moore and Rymer, 2007; Zoback et al., 1987). Thus, the differential stresses in the creeping section likely increase with depth, but they might be lower than commonly observed, and thus explain the higher *b*-values in this segment as compared to the Parkfield asperity.

3.3 How tectonic earthquakes and NVTs might contribute to plate motion

While we believe that our proposed mechanism to release plate motion through nano-earthquakes and NVT is plausible (Figure 5), it relies critically on the ability of extrapolation of observed seismicity into much smaller magnitude range. Therefore, the degree to which nano-earthquake and NVT potentially contribute to plate motion depend on two assumptions: 1) the aforementioned assumption of scale invariant power-law scaling, rather than band-limited exponential scaling; and 2) the minimum possible magnitude used for integration.

This reliance on the extrapolation to compute S_I is not fundamentally different for the one needed (and commonly used in hazard assessment) to compute S_L, where the maximum event size and shape of the size distribution is often unknown. Laboratory studies and very local field observations suggest that nano-earthquakes down to magnitude threshold of -7 to -4 occur (Goodfellow and Young, 2014; Mclaskey et al., 2014) so to our knowledge there is no physical reason to assume that a break in scaling of earthquakes is occurring within the extrapolation range. In the literature, breaks in scaling have been frequently proposed, but almost always could be explained by recording incompleteness or changes in magnitude scales. For NVTs, the evidence is less clear, since our publication is the first to establish their power-law scaling based on spectral analysis. Our hypothesised mechanism of plate motion, however, is testable and should be tested by observing even smaller events, something that

will be possible in the near future once the new borehole Tremorscope stations are operational.

We show the depth gradients of the seismic slip contribution of S_L und S_I (Figure 4c). In the upper 5km, the known seismic contribution to the long-term slip is negligible, which in the creeping section is consistent with the local surface observation of continuous aseismic sliding at plate velocity. In the Parkfield asperity, little surface creep is observed, and we speculate that the accumulating slip in this area might be released through participation in the rare largest events. Between 5-10km, however, the cumulative seismic slip S_L can, within the uncertainty, account for 100% of plate motion, such that no aseismic creep is needed. At greater depths, the slip estimates based on the NVT, S_I, shows that those tiny events are abundant enough to account for the full plate motion around the Moho. The large uncertainties in *b*-value around the Moho result in a large standard deviation for slip estimates at these depths.

For the cross-section analysis, we compare the locally calculated seismic slips S_L and S_I (Figure 6b) with the surface creep rates S_A derived from InSAR line-of-sight data for the period 2006-2010 (Figure 6a). We note that during this period, no significant earthquakes occurred along this section of the fault, and the displacement by seismicity is insignificantly low (contributes <1.5%). In Figure 6c we show the total slip, i.e. the combination of seismic slip S_L and S_I, and creep S_A. From a correlation analysis, we find that the *b*-values observed along the fault segment (computed continuously along fault with 1km-steps) are positively correlated with InSAR-observed creep rates (Figure 6e), while InSAR creep rates and computed seismic slip are negatively correlated (Figure 6f). The total slip is within the bounds of the assumed plate motion accommodated along this segment (Figure 6c).

In a final step, we map the seismic coupling coefficient, X (Figure 6d), which describes what fraction of the total plate motion is released in seismic slip (Scholz, 1998). Our model is again composed of an S_L and S_I component. Note that because fully coupled patches are also aseismic in the inter-seismic periods, our analysis is a lower limit of X. In selected patches (light blue), X reaches values >0.9, indicating that the full plate motion is released seismically in moderate and (mostly) large events.

These locked patches of faults are usually named asperities. Our assessment of X is broadly consistent with determination from geodetic data inversion (Tong et al., 2013; Titus et al., 2006), albeit the method applied here offers higher resolution at depth. However, the tremor-rich region at depth likewise is characterised through X values >0.5 and up to 1, indicating that here also the majority of plate motion is released through seismic slip. Note also that in the brittle part of the crust, a few regions release a substantial fraction of the plate motion through the smallest tectonic earthquakes.

4. Conclusions

Our analysis suggests that the size distribution of NVT follows power-law scaling indicative of a scale invariant process (Figure 2). Based on this finding, we hypotheses that the energy release along active faults might, in selected regions be different than currently assumed. Usually, in regions with b<1.5, tectonic earthquakes release more than 99.9% of the accumulated plate motion in the largest events with recurrence times of decades to centuries. If NVT are scale invariant down to Mw of about -4, then Parkfield's tremors at Cholame region, however, have the potential to release the same amount of energy and plate motion per-year through numerous nano- or NVT-events (with magnitudes ranging from 0 to -4). In some regions in the brittle crust, stress release is equally concentrated in the currently invisible range and accomplished through nano-earthquakes with magnitudes ranging from 0 to -7. Plates in these regions might partially move through numerous and scale-invariant stick-slip events, not steady dislocation creep. We speculate that also in other regions where NVT have been observed, i.e. in New Zealand (Wech et al., 2012), Japan (Hirose and Obara, 2006) and Cascadia (Kao et al., 2010), a substantial fraction of plate motion could potentially be related to such non-detected stick-slip events. The intriguing geographical correlation between NTV observations and locked sections of major faults suggests that understanding these tiny events better will provide crucial insights into the processes leading to the rarest giant earthquakes.

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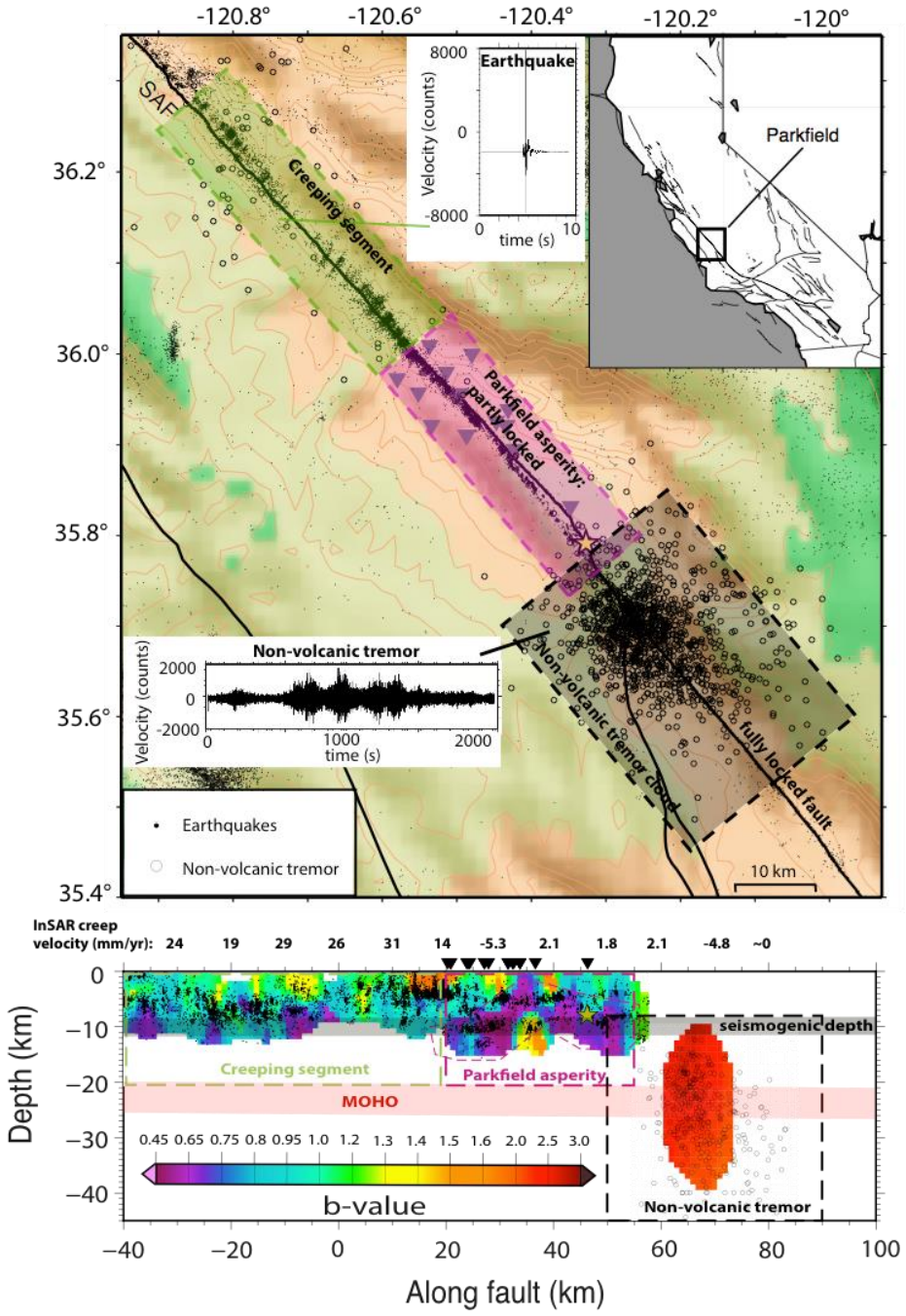

Figure 1: **Distribution of EQs and NVTs along the different fault regimes of the SAF:** Distribution of EQs and NVTs along the different fault regimes of the SAF : (Top) aerial view: creeping segment (green box), partly locked - partly creeping transition zone (Parkfield asperity, purple box), fully locked fault segment with NVTs at

depth (black box). Waveforms: illustrating differences in duration and amplitude between a typical NVT and a tectonic earthquake. Triangles: HRSN stations; black circles: 1492 tremor events $M_w \geq 1.4$; black dots: 5288 tectonic earthquakes $M_w \geq 1.3$ (NCSN catalogue from the Northern California Earthquake Data Center, 1985-2016); Catalogue magnitudes are M_d for events <3 and mostly M_w and M_L for events >3. Duration magnitude M_d and Moment magnitude M_w are reported to scale 1:1 and above magnitude 3 M_L and M_w estimates are also in good agreement); yellow star: hypocentre of the 2004 M6 event. yellow star: hypocentre of the 2004 M6 event. (Bottom) Spatial *b*-value cross-section, estimated from the nearest 150. We note that even though for large sampling windows the seismicity along the creeping section has been reported to not follow Gutenberg-Richter (Vorobieva et al., 2016), at the high-resolution local scale (average sampling radius is 1.8km), we obtain robust FMD fits. Seismogenic depth: bottom of 90-99% of seismicity; fine dashed line: asperity volume as defined by earlier studies (Wiemer and Wyss, 2002).

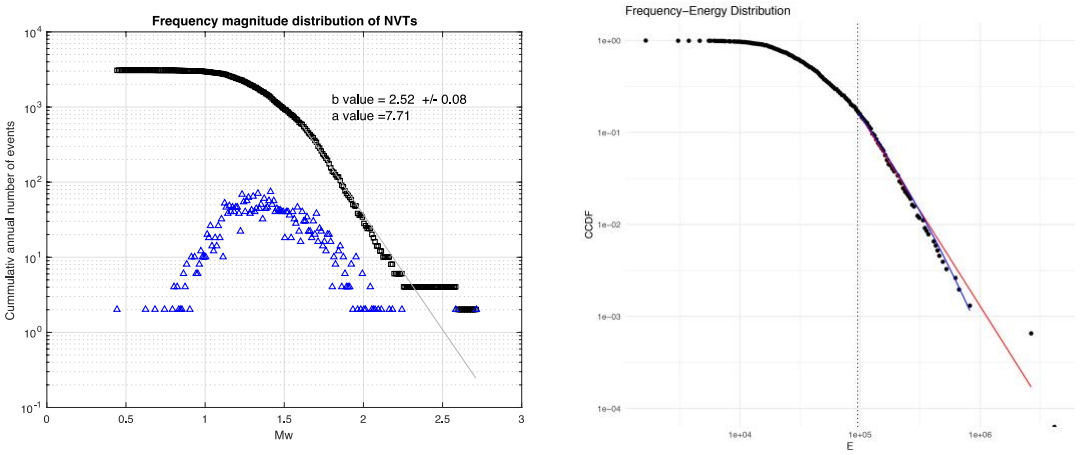

Figure 2: **Left: Frequency magnitude distribution of NVTs near Parkfield,** illustrating that the NVT FMD follows power-law scaling as observed almost universally for tectonic earthquakes and for earthquakes. Blue triangles are numbers of events and the black represents cumulative number. The slope of the Gutenberg-Richter law, the *b*-value (*b*=2.5) of the NVT FMD is considerably higher than usually observed for tectonic earthquakes. Right: Complementary cumulative distribution function (CCDF) of the seismic energy E with power-law fit in red and stretched exponential fit in blue. The power-law is performs slightly better than the stretched exponential. The estimated stretching parameter of 0.2

confirms that the distribution does not follow a pure exponential function (which would infer a stretching parameter of 1).

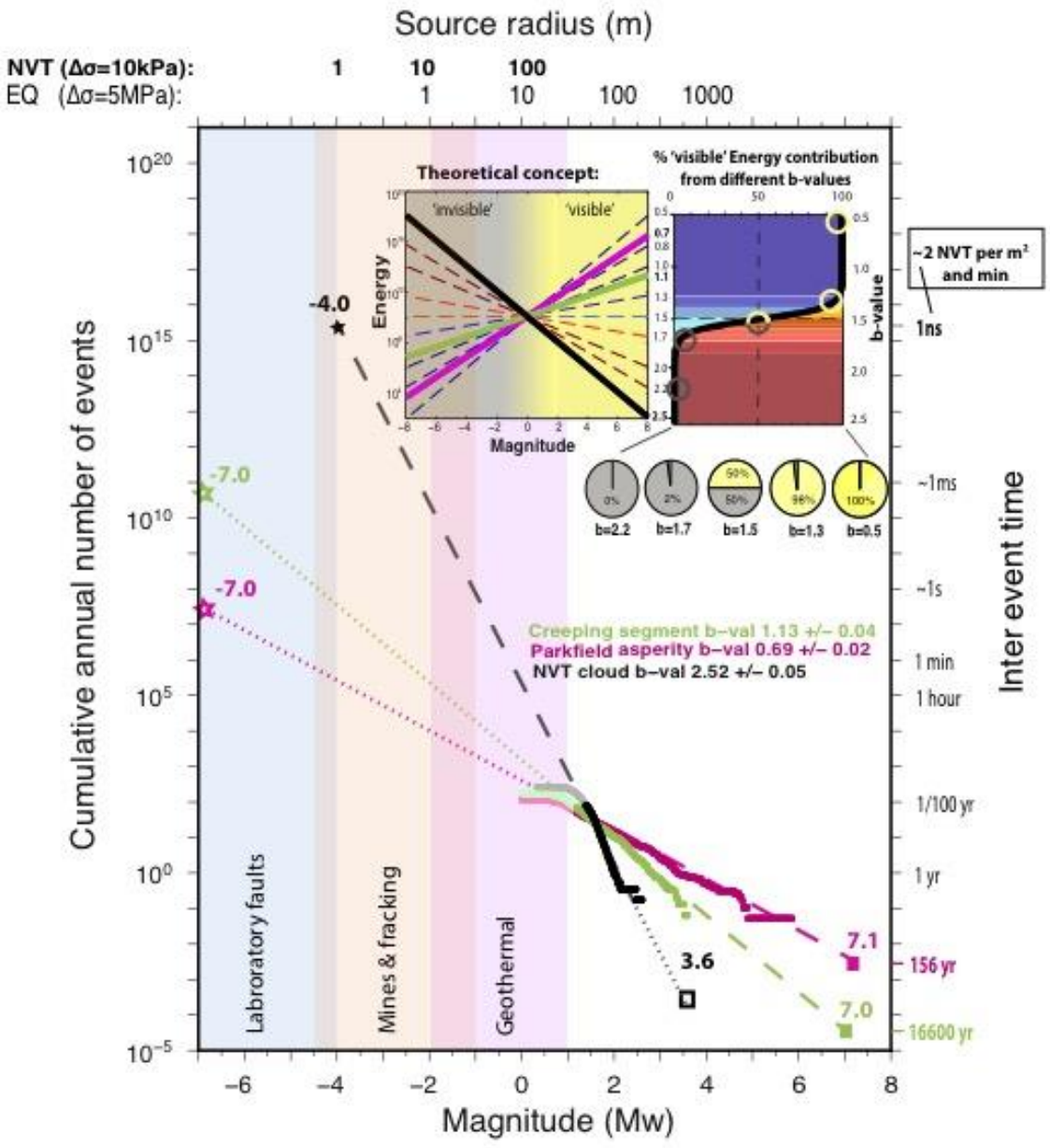

Fig.3: NVT FMD follows power law scaling: Creeping segment (green), Parkfield asperity (purple) and Cholame NVT (black) with Gutenberg-Richter extrapolation to upper end (squares) and lower end (stars) magnitude boundaries (dashed lines: extrapolation is crucial for energy release contribution; dotted lines: extrapolation is negligible for energy contribution) with corresponding inter-event times at right axis and source radii on top axis. Shadings indicate independent observations of events in the 'invisible' range: from geothermal systems (light purple, e.g. Basel, Switzerland), from mines and fracking environments (light yellow; e.g. Mponeng gold mine, South Africa (Kwiatek et al., 2011), Jonah Field, USA (Davies et al., 2013)) and in laboratory fault studies (Mclaskey et al., 2014). (Inset) Theoretical concept: Different *b*-value regimes experience a different ratio of energy contribution between 'visible' energy (M~>0) and 'invisible' energy (M~<0). For b=1.5, 50% is contributed by 'visible' and 'invisible' energy, respectively. For b<1.5 most energy is contributed by events with M<0, and for b>1.5 most energy is contributed by events with M>0.

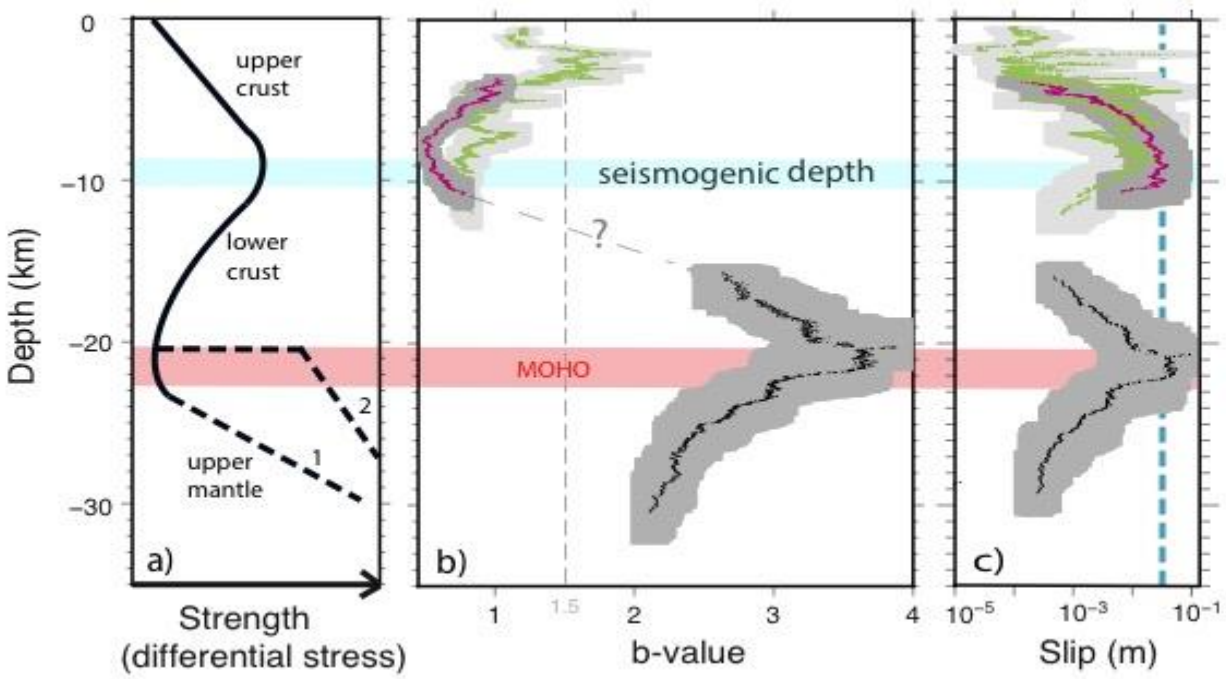

Fig.4: Depth profiles: measuring strength through to the upper mantle: Depth profiles: measuring strength through to the upper mantle a) Lithospheric strength profile (Christmas tree): Gradient 1 following Molnar (1988) and gradient 2 adapted between the two (wet and dry) end members for California suggested by Platt and Behr (2011). Important boundaries: transition between upper crust to lower crust at ~10km depth, i.e. the seismogenic depth (light blue bar) and, the boundary between crust and upper mantle, i.e. the Mohorovičić discontinuity (red bar) (McBride and Brown, 1986). b) *b*-value-depth profiles, calculated from moving 150-event windows through depth (1-event-steps); c) Slip-depth profiles, calculated from the same windows as the *b*-value profile, integrating from M-4 to M3.6 for tremors, and M-7 to M7.1 for tectonic earthquakes, respectively; blue dotted line: average annual plate motion of about 28-45mm. b+c) purple: Parkfield asperity, green: creeping segment, black: NVTs. Grey shades represent bootstrapped 1σ-error in *b*-value and depth.

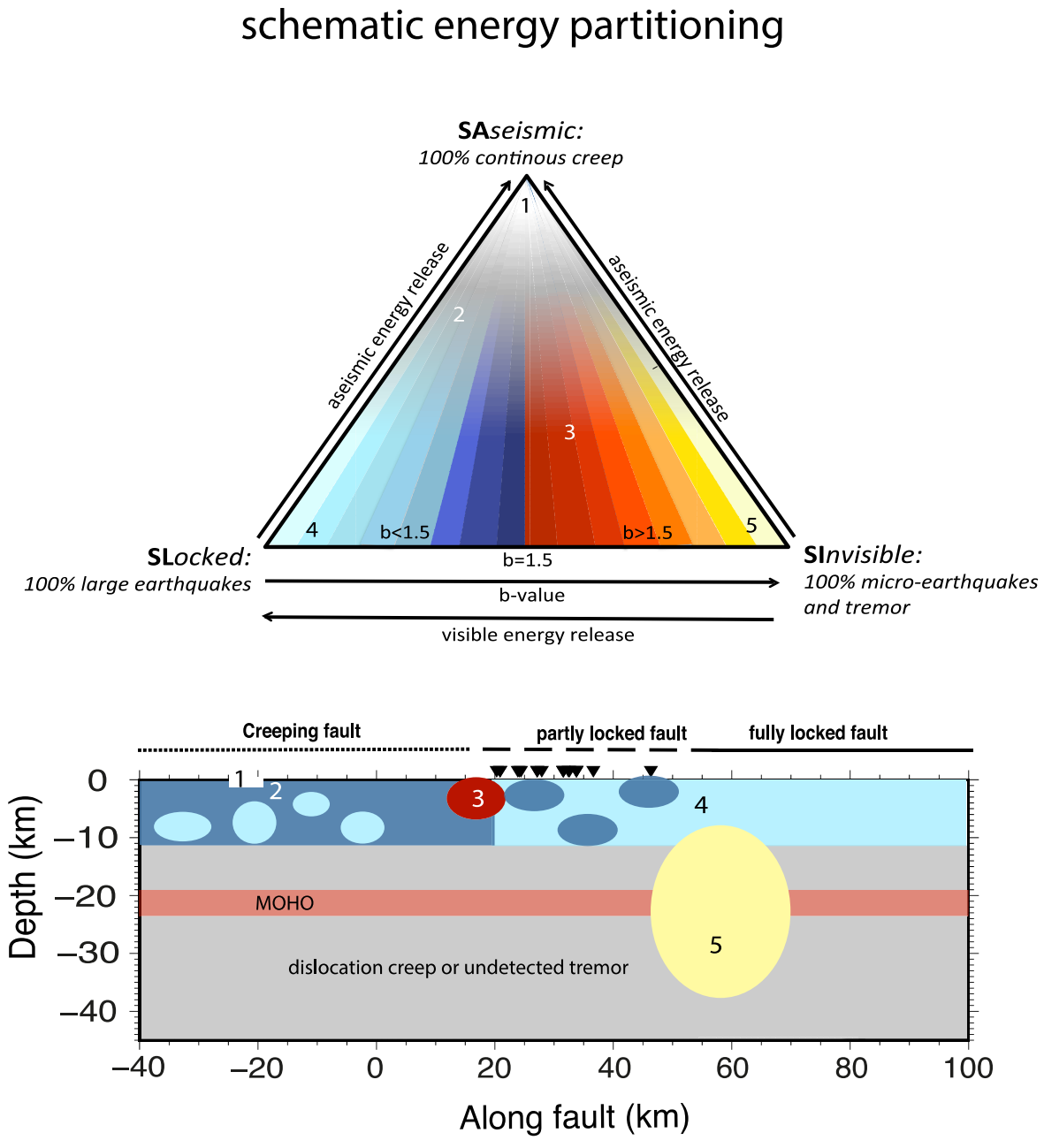
schematic energy partitioning
SAseismic:
100% continous creep
1
aseismic energy release
aseismic energy release
2
3
4
5
b<1.5
b>1.5
b=1.5
SLocked:
100% large earthquakes
SInvisible:
100% micro-earthquakes
and tremor
b-value
visible energy release
Creeping fault
partly locked fault
fully locked fault
1
2
3
4
5
MOHO
dislocation creep or undetected tremor
Depth (km)
0
−10
−20
−30
−40
−40
−20
0
20
40
60
80
100
Along fault (km)

Fig. 5: Schematic energy partitioning conceptual model. Top triangle: Illustration of different energy release regimes, each corner represents an end-member, numbers indicate the approximate partitioning of selected patches on the San Andreas Faults. Bottom: Schematic cross-sectional view along the San Andreas Fault, indicating the location of patches shown in the top.

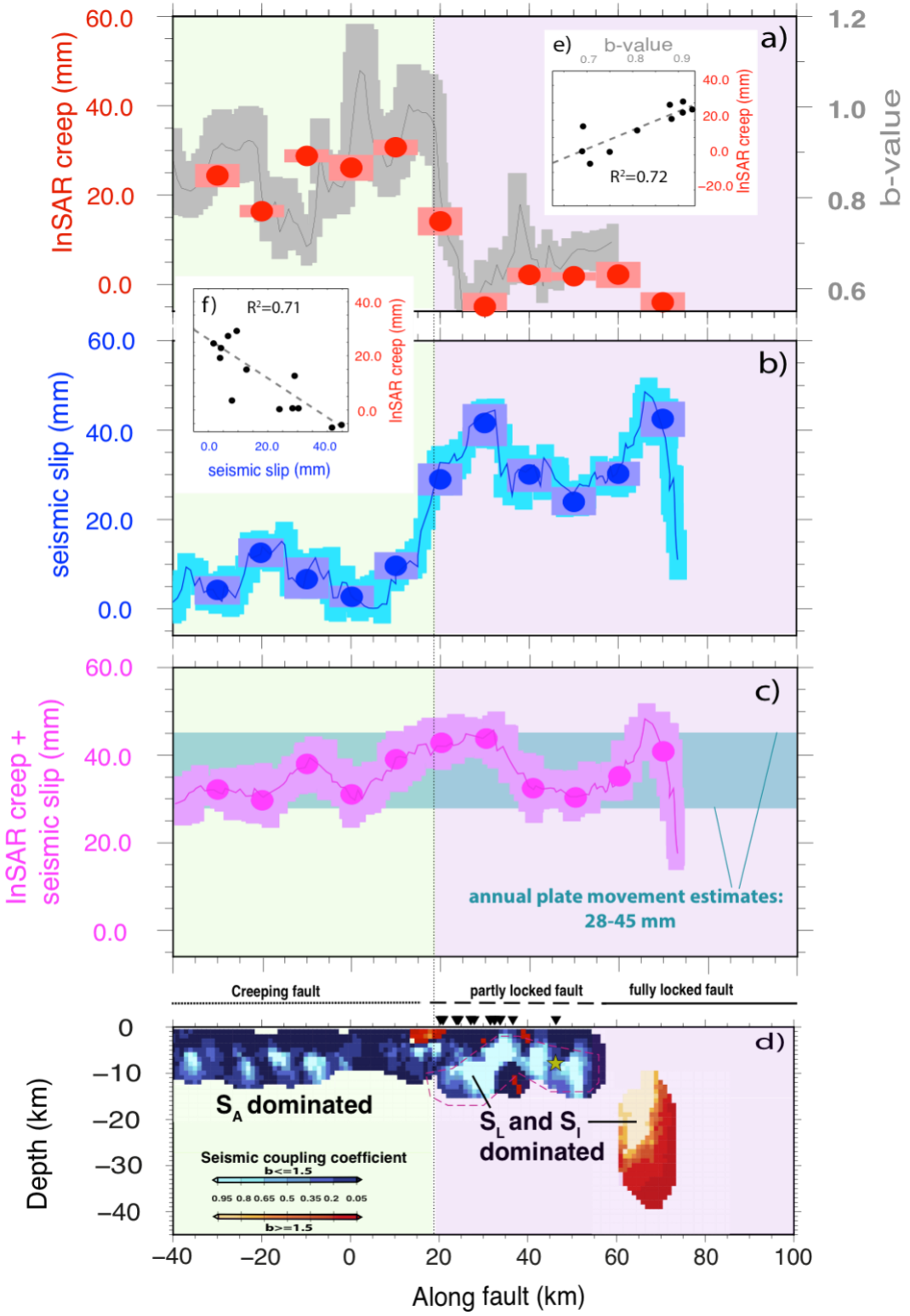
a)
b)
c)
d)
e) b-value
f) R²=0.71
R²=0.72
InSAR creep (mm)
seismic slip (mm)
b-value
InSAR creep + seismic slip (mm)
annual plate movement estimates: 28-45 mm
Creeping fault
partly locked fault
fully locked fault
Depth (km)
Along fault (km)
S_A dominated
S_L and S_I dominated
Seismic coupling coefficient
b<=1.5
0.95 0.8 0.65 0.5 0.35 0.2 0.05
b>=1.5

Fig.6: Relating seismic slip with surface creep and seismic coupling: a) InSAR creep (Tong et al., 2013; Titus el al., 2006) along fault (red, uncertainty and bin width indicated by light red boxes) and continuous b-value variation (Tormann et al., 2013) (black) with 1σ-uncertainty (grey) b) Calculated seismic slip along fault: continuous (dark blue line) with 1σ-uncertainty (light blue), and mean slip value for each InSAR bin (dark blue points) c) Sum of calculated seismic slip (SI + SL) and surface creep (S_A): continuous (purple line) with 1σ-uncertainty (light purple) and mean for each InSAR bin (purple points) d) Nearest 150-neighbours seismic coupling coefficient map (same sampling as *b*-value map): blue: indicates low *b*-value regime $b<1.5$, red: high *b*-value regime $b\geq1.5$, e) Positive correlation between *b*-values (grey) and InSAR creep data (red), f) Negative correlation between calculated seismic slip (blue) and InSAR creep data (red).

APPENDIX:

NVT Catalogue

ID	Date (yyyymmdd)	Time (HHMM)	lat	lon	depth(km)	Me	Mw
20010727000000	20010727	421	35.52	-120.11	46.83	0.52	1.75
20010728000000	20010728	419	35.64	-120.28	10.87	0.22	1.45
20010801000000	20010801	559	35.60	-120.17	38.12	0.38	1.61
20010801000000	20010801	1014	35.76	-120.55	20.99	-0.37	0.86
20010805000000	20010805	139	35.64	-120.16	42.54	0.40	1.63
20010822000000	20010822	107	35.64	-120.29	12.43	0.55	1.78
20010904000000	20010904	312	35.62	-120.21	23.96	0.75	1.98
20010919000000	20010919	1933	35.65	-120.33	18.05	0.10	1.33
20010919000000	20010919	2212	35.66	-120.32	21.31	0.09	1.32
20010920000000	20010920	152	35.66	-120.32	17.37	0.18	1.41
20010920000000	20010920	254	35.65	-120.30	16.18	0.09	1.32
20010920000000	20010920	1317	35.60	-120.39	33.28	0.05	1.28
20010920000000	20010920	1739	35.63	-120.32	26.70	0.37	1.60
20011007000000	20011007	220	35.61	-120.26	23.48	0.15	1.38
20011013000000	20011013	6	35.59	-120.21	23.95	0.21	1.44
20011013000000	20011013	1157	35.62	-120.32	25.32	0.28	1.51
20011017000000	20011017	2245	35.44	-120.03	43.55	0.54	1.77
20011018000000	20011018	1235	35.64	-120.10	42.42	0.42	1.65
20011023000000	20011023	1610	35.63	-120.27	25.02	0.41	1.64
20011026000000	20011026	1340	35.96	-120.17	7.74	-0.37	0.86
20011110000000	20011110	2035	35.60	-120.29	30.28	0.10	1.33
20011110000000	20011110	2040	35.67	-120.31	19.77	-0.04	1.19
20011114000000	20011114	1651	35.66	-120.33	22.46	-0.14	1.09
20011127000000	20011127	1919	35.96	-119.99	3.32	-0.13	1.10

20011203000000	20011203	1434	35.67	-120.19	23.64	0.17	1.40
20011206000000	20011206	1015	35.68	-120.29	19.05	-0.36	0.87
20011206000000	20011206	1019	35.65	-120.27	20.42	0.12	1.35
20011207000000	20011207	513	35.63	-120.32	18.85	0.04	1.27
20011207000000	20011207	1323	35.66	-120.34	15.43	-0.20	1.03
20011208000000	20011208	923	35.69	-120.24	28.94	0.33	1.56
20011209000000	20011209	1016	35.72	-120.26	24.28	-0.20	1.03
20011211000000	20011211	55	35.69	-120.33	18.06	0.00	1.23
20011217000000	20011217	1357	35.72	-120.27	20.19	0.16	1.39
20011228000000	20011228	611	35.70	-120.22	24.18	0.04	1.27
20020101000000	20020101	711	35.68	-120.28	20.77	-0.26	0.97
20020107000000	20020107	1854	35.59	-120.24	22.00	0.09	1.32
20020108000000	20020108	1106	35.65	-120.22	19.75	-0.13	1.10
20020113000000	20020113	1825	35.68	-120.35	16.76	-0.11	1.12
20020117000000	20020117	1647	35.70	-120.26	24.60	-0.09	1.14
20020117000000	20020117	1651	35.61	-120.27	21.52	-0.06	1.17
20020127000000	20020127	2309	35.64	-120.65	15.42	-0.08	1.15
20020130000000	20020130	428	35.62	-120.16	41.15	0.17	1.40
20020202000000	20020202	1612	35.68	-120.35	23.00	-0.10	1.13
20020202000000	20020202	2331	35.69	-120.30	25.93	0.17	1.40
20020203000000	20020203	601	35.65	-120.28	20.30	0.28	1.51
20020203000000	20020203	1622	35.67	-120.35	21.02	0.11	1.34
20020204000000	20020204	358	35.67	-120.12	55.50	0.83	2.06
20020204000000	20020204	2309	35.67	-120.36	18.72	0.14	1.37
20020209000000	20020209	1442	35.67	-120.35	22.57	0.32	1.55
20020214000000	20020214	1438	35.71	-120.22	36.68	0.20	1.43
20020215000000	20020215	122	35.59	-120.25	16.08	-0.04	1.19
20020226000000	20020226	1209	35.59	-120.24	23.87	0.10	1.33
20020309000000	20020309	153	35.57	-120.18	28.24	0.53	1.76
20020309000000	20020309	208	35.67	-120.32	17.15	-0.11	1.12
20020315000000	20020315	148	35.44	-119.92	46.27	0.78	2.01
20020315000000	20020315	511	35.67	-120.28	25.94	0.19	1.42
20020315000000	20020315	824	35.64	-120.23	27.29	0.18	1.41

20020315000000	20020315	2127	35.65	-120.28	23.65	0.26	1.49
20020316000000	20020316	524	35.66	-120.20	22.56	-0.08	1.15
20020316000000	20020316	1558	35.62	-120.27	16.88	0.35	1.58
20020318000000	20020318	2319	35.65	-120.33	19.88	0.24	1.47
20020321000000	20020321	251	35.65	-120.28	19.21	0.17	1.40
20020326000000	20020326	1309	35.62	-120.25	22.69	-0.02	1.21
20020330000000	20020330	2016	35.65	-120.25	27.07	0.36	1.59
20020412000000	20020412	1634	35.65	-120.22	25.66	-0.06	1.17
20020412000000	20020412	1640	35.66	-120.29	18.47	-0.04	1.19
20020419000000	20020419	337	35.65	-120.33	18.84	0.00	1.23
20020427000000	20020427	1024	35.58	-120.10	51.45	0.68	1.91
20020503000000	20020503	2202	35.65	-120.37	12.45	0.05	1.28
20020604000000	20020604	1614	35.70	-120.37	17.14	0.17	1.40
20020621000000	20020621	116	35.67	-120.29	20.11	0.18	1.41
20020627000000	20020627	2344	35.67	-120.34	21.16	-0.06	1.17
20020627000000	20020627	2356	35.65	-120.38	4.46	-0.35	0.88
20020720000000	20020720	1812	35.63	-120.22	30.43	0.33	1.56
20020721000000	20020721	943	35.63	-120.31	19.30	0.18	1.41
20020721000000	20020721	1741	35.56	-120.34	33.08	0.64	1.87
20020722000000	20020722	2221	35.63	-120.30	15.07	0.33	1.56
20020723000000	20020723	1357	35.71	-120.37	21.07	0.01	1.24
20020725000000	20020725	147	35.60	-120.28	23.22	0.18	1.41
20020726000000	20020726	256	35.65	-120.30	21.09	0.30	1.53
20020727000000	20020727	1609	35.61	-120.31	16.72	-0.11	1.12
20020728000000	20020728	2008	35.68	-120.29	23.86	-0.08	1.15
20020802000000	20020802	2001	35.61	-120.28	23.61	0.54	1.77
20020805000000	20020805	2001	35.65	-120.23	15.98	0.14	1.37
20020810000000	20020810	1722	35.67	-120.39	11.76	-0.24	0.99
20020815000000	20020815	2319	35.58	-120.30	22.73	0.38	1.61
20020820000000	20020820	2204	35.65	-120.32	20.78	0.25	1.48
20020823000000	20020823	2336	35.65	-120.31	8.32	0.12	1.35
20020914000000	20020914	2111	35.58	-120.23	29.98	0.06	1.29
20020917000000	20020917	1357	35.53	-120.19	43.53	0.67	1.90

20021006000000	20021006	1633	35.65	-120.23	21.57	-0.13	1.10
20021007000000	20021007	411	35.73	-120.18	39.94	0.50	1.73
20021027000000	20021027	1655	35.62	-120.27	21.53	0.00	1.23
20021027000000	20021027	1700	35.67	-120.27	16.18	0.30	1.53
20021028000000	20021028	1038	35.66	-120.29	16.30	0.07	1.30
20021101000000	20021101	108	35.68	-120.20	24.10	-0.08	1.15
20021104000000	20021104	1156	35.68	-120.34	14.99	-0.28	0.95
20021104000000	20021104	2203	35.63	-120.31	28.50	0.11	1.34
20021105000000	20021105	637	35.59	-120.30	23.57	-0.06	1.17
20021105000000	20021105	1155	35.61	-120.25	12.34	0.04	1.27
20021105000000	20021105	1200	35.69	-120.31	13.88	-0.04	1.19
20021105000000	20021105	2319	35.68	-120.37	15.04	-0.18	1.05
20021106000000	20021106	428	35.63	-120.26	11.12	0.24	1.47
20021106000000	20021106	1350	35.68	-120.32	16.93	0.08	1.31
20021107000000	20021107	342	35.58	-120.26	20.28	0.00	1.23
20021107000000	20021107	1415	35.54	-120.32	34.21	0.35	1.58
20021109000000	20021109	2040	35.58	-120.60	17.98	0.20	1.43
20021112000000	20021112	2302	35.66	-120.21	18.42	-0.02	1.21
20021114000000	20021114	1235	35.67	-120.34	8.12	-0.25	0.98
20021116000000	20021116	339	35.65	-120.14	18.75	0.03	1.26
20021118000000	20021118	802	35.63	-120.37	23.91	0.35	1.58
20021122000000	20021122	619	35.66	-120.34	8.41	-0.03	1.20
20021125000000	20021125	1315	35.69	-120.30	15.71	-0.15	1.08
20021127000000	20021127	539	35.58	-120.18	21.32	0.10	1.33
20021129000000	20021129	1248	35.61	-120.31	18.73	0.10	1.33
20021206000000	20021206	825	35.62	-120.32	18.04	0.35	1.58
20021209000000	20021209	1749	35.73	-120.26	15.37	-0.22	1.01
20021221000000	20021221	408	35.42	-120.45	10.65	0.13	1.36
20021226000000	20021226	925	35.68	-120.26	18.03	0.12	1.35
20021228000000	20021228	345	35.67	-120.21	19.64	0.07	1.30
20021231000000	20021231	225	35.65	-120.21	21.32	-0.11	1.12
20030101000000	20030101	1531	35.72	-120.31	16.47	0.20	1.43
20030104000000	20030104	154	35.47	-119.83	45.74	0.76	1.99

20030104000000	20030104	434	35.68	-120.19	20.01	0.18	1.41
20030105000000	20030105	1320	35.69	-120.30	15.15	0.28	1.51
20030107000000	20030107	2047	35.58	-120.43	12.20	0.10	1.33
20030114000000	20030114	1035	35.68	-120.31	18.10	0.10	1.33
20030117000000	20030117	1822	35.64	-120.25	16.72	-0.01	1.22
20030122000000	20030122	235	35.77	-120.23	16.28	-0.17	1.06
20030122000000	20030122	246	35.61	-120.22	33.37	0.03	1.26
20030127000000	20030127	1545	35.63	-120.19	31.93	0.07	1.30
20030130000000	20030130	1653	35.62	-120.38	19.54	0.04	1.27
20030201000000	20030201	552	35.62	-120.25	31.93	0.18	1.41
20030203000000	20030203	2317	35.62	-120.28	24.49	0.10	1.33
20030212000000	20030212	726	35.66	-120.46	15.92	0.07	1.30
20030215000000	20030215	417	35.65	-120.26	19.75	0.16	1.39
20030223000000	20030223	836	35.72	-120.21	22.06	0.04	1.27
20030302000000	20030302	1637	35.70	-120.26	16.01	-0.08	1.15
20030302000000	20030302	1641	35.71	-120.17	21.43	0.03	1.26
20030317000000	20030317	554	35.64	-120.29	14.10	-0.09	1.14
20030325000000	20030325	1848	35.65	-120.39	5.22	-0.32	0.91
20030325000000	20030325	1853	35.62	-120.39	5.16	-0.06	1.17
20030328000000	20030328	555	35.62	-120.26	26.53	0.11	1.34
20030409000000	20030409	52	35.68	-120.36	21.66	0.25	1.48
20030415000000	20030415	1359	35.65	-120.28	20.62	0.21	1.44
20030419000000	20030419	2306	35.51	-120.21	46.99	0.62	1.85
20030419000000	20030419	2320	35.70	-120.20	15.72	-0.05	1.18
20030421000000	20030421	240	35.56	-119.97	35.95	0.40	1.63
20030423000000	20030423	32	35.72	-120.26	15.69	-0.05	1.18
20030423000000	20030423	247	35.72	-120.32	20.80	-0.20	1.03
20030423000000	20030423	341	35.72	-120.31	21.18	-0.05	1.18
20030423000000	20030423	1203	35.66	-120.31	12.76	-0.03	1.20
20030423000000	20030423	1903	35.68	-120.32	23.20	0.20	1.43
20030425000000	20030425	1359	35.64	-120.29	19.63	0.31	1.54
20030427000000	20030427	39	35.73	-120.28	38.25	0.61	1.84
20030430000000	20030430	1652	35.70	-120.34	18.43	0.24	1.47

20030503000000	20030503	303	35.62	-120.31	30.20	0.22	1.45
20030506000000	20030506	353	35.71	-120.29	18.07	0.11	1.34
20030510000000	20030510	1220	35.69	-120.20	24.64	0.29	1.52
20030517000000	20030517	319	35.65	-120.35	15.20	0.15	1.38
20030528000000	20030528	542	35.72	-120.23	18.54	0.22	1.45
20030610000000	20030610	2009	35.70	-120.36	10.50	0.02	1.25
20030616000000	20030616	24	35.71	-120.31	23.58	0.00	1.23
20030616000000	20030616	446	35.83	-120.28	12.96	-0.36	0.87
20030617000000	20030617	1821	35.65	-120.13	12.11	0.23	1.46
20030706000000	20030706	2252	35.58	-120.31	25.53	0.56	1.79
20030717000000	20030717	1933	35.72	-120.27	34.54	-0.08	1.15
20030723000000	20030723	2229	35.67	-120.34	20.28	-0.15	1.08
20030723000000	20030723	2234	35.69	-120.31	26.95	0.05	1.28
20030725000000	20030725	2142	35.63	-120.34	20.22	0.07	1.30
20030804000000	20030804	2218	35.64	-120.33	18.28	-0.11	1.12
20030805000000	20030805	1747	35.79	-120.22	34.93	0.09	1.32
20030806000000	20030806	507	35.69	-120.33	19.12	-0.07	1.16
20030809000000	20030809	1143	35.63	-120.32	16.26	0.03	1.26
20030817000000	20030817	1926	35.70	-120.25	19.38	0.01	1.24
20030827000000	20030827	712	35.70	-120.20	17.74	0.12	1.35
20030904000000	20030904	1643	35.66	-120.34	24.11	-0.02	1.21
20030905000000	20030905	145	35.62	-120.24	24.09	0.14	1.37
20030906000000	20030906	537	35.60	-120.26	18.48	0.25	1.48
20030906000000	20030906	2040	35.74	-120.14	39.69	0.16	1.39
20030907000000	20030907	1523	35.61	-120.33	31.99	0.35	1.58
20030910000000	20030910	1635	35.63	-120.33	27.24	0.00	1.23
20030913000000	20030913	1838	35.62	-120.32	17.92	0.09	1.32
20030921000000	20030921	1859	35.63	-120.35	20.22	0.09	1.32
20030925000000	20030925	2025	35.65	-120.34	23.48	0.18	1.41
20031002000000	20031002	1130	35.74	-120.22	20.15	-0.22	1.01
20031015000000	20031015	114	35.68	-120.30	24.33	0.29	1.52
20031019000000	20031019	25	35.33	-120.50	6.19	0.33	1.56
20031027000000	20031027	920	35.67	-120.47	19.90	-0.28	0.95

20031031000000	20031031	101	35.65	-120.38	17.44	-0.14	1.09
20031031000000	20031031	442	35.66	-120.30	18.81	0.03	1.26
20031031000000	20031031	1006	35.66	-120.29	23.28	-0.07	1.16
20031101000000	20031101	1843	35.48	-120.19	50.11	0.42	1.65
20031102000000	20031102	745	35.73	-120.36	16.05	-0.35	0.88
20031106000000	20031106	1848	35.69	-120.36	18.41	1.48	2.71
20031109000000	20031109	1530	35.64	-120.32	26.18	0.04	1.27
20031111000000	20031111	1307	35.62	-120.20	18.93	-0.11	1.12
20031115000000	20031115	1707	35.67	-120.45	8.44	0.09	1.32
20031117000000	20031117	2158	35.72	-120.36	18.00	-0.30	0.93
20031207000000	20031207	1214	35.62	-120.24	22.23	0.32	1.55
20031207000000	20031207	1225	35.70	-120.18	30.12	0.46	1.69
20031211000000	20031211	505	35.71	-120.23	24.00	-0.09	1.14
20031216000000	20031216	324	35.63	-119.97	42.25	0.40	1.63
20031216000000	20031216	1215	35.65	-120.26	17.79	0.19	1.42
20031220000000	20031220	935	35.61	-120.31	20.95	0.02	1.25
20031222000000	20031222	1253	35.67	-120.27	18.69	0.13	1.36
20031228000000	20031228	1814	35.64	-120.25	38.97	0.36	1.59
20040101000000	20040101	229	35.69	-120.32	21.98	0.17	1.40
20040101000000	20040101	243	35.60	-120.18	24.38	0.65	1.88
20040103000000	20040103	2046	35.61	-120.35	30.49	0.61	1.84
20040105000000	20040105	719	35.60	-120.69	28.62	0.35	1.58
20040107000000	20040107	158	35.47	-120.50	43.44	0.42	1.65
20040113000000	20040113	1834	35.51	-120.08	40.35	0.93	2.16
20040116000000	20040116	625	35.67	-120.10	33.24	0.35	1.58
20040122000000	20040122	547	35.68	-120.28	21.06	0.46	1.69
20040123000000	20040123	1116	35.54	-120.35	36.43	0.55	1.78
20040124000000	20040124	953	35.62	-120.34	24.83	0.20	1.43
20040126000000	20040126	718	35.66	-120.24	24.42	0.47	1.70
20040127000000	20040127	758	35.66	-120.29	24.50	0.01	1.24
20040127000000	20040127	828	35.55	-120.13	32.15	0.45	1.68
20040206000000	20040206	845	35.65	-120.27	22.46	0.34	1.57
20040208000000	20040208	1629	35.69	-120.24	24.21	0.08	1.31

20040211000000	20040211	1530	35.60	-120.29	20.75	-0.27	0.96
20040212000000	20040212	518	35.69	-120.34	10.10	-0.25	0.98
20040217000000	20040217	314	35.68	-120.34	15.05	0.00	1.23
20040224000000	20040224	1748	35.57	-120.31	29.27	0.48	1.71
20040308000000	20040308	1312	35.73	-120.29	16.83	0.20	1.43
20040314000000	20040314	958	35.68	-120.04	18.75	0.14	1.37
20040316000000	20040316	1409	35.67	-120.29	13.94	0.32	1.55
20040320000000	20040320	328	35.68	-120.28	20.05	0.12	1.35
20040322000000	20040322	37	35.60	-120.12	30.54	0.18	1.41
20040323000000	20040323	1713	35.58	-120.64	18.77	-0.15	1.08
20040329000000	20040329	2030	35.69	-120.25	31.45	0.50	1.73
20040329000000	20040329	2102	35.64	-120.39	17.91	0.19	1.42
20040329000000	20040329	2130	35.68	-120.38	19.42	0.29	1.52
20040329000000	20040329	2240	35.62	-120.28	39.94	0.38	1.61
20040330000000	20040330	35	35.65	-120.33	21.28	0.33	1.56
20040330000000	20040330	520	35.68	-120.34	15.26	0.10	1.33
20040330000000	20040330	606	35.70	-120.41	19.65	-0.29	0.94
20040331000000	20040331	754	35.66	-120.29	21.44	0.24	1.47
20040402000000	20040402	47	35.58	-120.37	26.25	0.59	1.82
20040404000000	20040404	1131	35.67	-120.24	16.61	-0.10	1.13
20040405000000	20040405	314	35.62	-120.18	21.34	0.68	1.91
20040407000000	20040407	1423	35.68	-120.26	20.91	0.18	1.41
20040413000000	20040413	903	35.73	-120.28	23.61	0.07	1.30
20040414000000	20040414	254	35.61	-120.28	18.67	0.22	1.45
20040416000000	20040416	2209	35.69	-120.33	20.22	-0.09	1.14
20040421000000	20040421	2338	35.68	-120.22	34.92	0.15	1.38
20040421000000	20040421	2343	35.65	-120.33	25.46	-0.04	1.19
20040425000000	20040425	1134	35.65	-120.23	16.95	0.07	1.30
20040426000000	20040426	116	35.63	-120.28	17.10	-0.02	1.21
20040426000000	20040426	2150	35.55	-120.18	19.59	0.32	1.55
20040429000000	20040429	40	35.60	-120.29	18.46	0.69	1.92
20040430000000	20040430	851	35.72	-120.21	30.46	-0.05	1.18
20040502000000	20040502	1756	35.61	-120.27	23.00	0.20	1.43

20040506000000	20040506	1403	35.69	-120.19	10.45	-0.25	0.98
20040508000000	20040508	713	35.81	-120.12	34.51	0.28	1.51
20040508000000	20040508	722	35.69	-120.26	15.91	-0.14	1.09
20040513000000	20040513	702	35.73	-120.29	21.76	-0.10	1.13
20040517000000	20040517	734	35.69	-120.22	21.63	0.25	1.48
20040523000000	20040523	530	35.65	-120.30	13.22	0.06	1.29
20040525000000	20040525	2242	35.60	-120.27	19.68	0.09	1.32
20040526000000	20040526	936	35.69	-120.22	18.76	0.02	1.25
20040526000000	20040526	957	35.71	-120.21	16.15	-0.27	0.96
20040529000000	20040529	612	35.73	-120.26	18.89	-0.03	1.20
20040613000000	20040613	1303	35.50	-119.92	45.26	0.81	2.04
20040616000000	20040616	1335	35.77	-120.20	27.35	0.19	1.42
20040618000000	20040618	1809	35.58	-120.17	22.10	0.07	1.30
20040619000000	20040619	2345	35.67	-120.33	10.99	-0.10	1.13
20041017000000	20041017	1807	35.70	-120.20	20.45	0.18	1.41
20041018000000	20041018	528	35.69	-120.23	30.44	-0.01	1.22
20041020000000	20041020	728	35.66	-120.25	19.48	0.58	1.81
20041021000000	20041021	956	35.72	-120.33	15.77	-0.17	1.06
20041021000000	20041021	1143	35.71	-120.30	18.19	0.26	1.49
20041022000000	20041022	1413	35.68	-120.18	31.32	0.66	1.89
20041023000000	20041023	1127	35.73	-120.36	23.41	0.04	1.27
20041024000000	20041024	26	35.72	-120.29	39.26	0.11	1.34
20041024000000	20041024	146	35.69	-120.21	20.94	-0.10	1.13
20041024000000	20041024	304	35.65	-120.25	15.02	-0.01	1.22
20041026000000	20041026	317	35.71	-120.32	20.78	0.34	1.57
20041027000000	20041027	2233	35.73	-120.25	17.80	-0.03	1.20
20041027000000	20041027	2238	35.73	-120.26	20.29	-0.02	1.21
20041030000000	20041030	845	35.69	-120.30	18.93	0.31	1.54
20041030000000	20041030	1004	35.69	-120.41	22.86	-0.08	1.15
20041031000000	20041031	408	35.66	-120.33	24.77	0.31	1.54
20041031000000	20041031	1010	35.67	-120.27	16.57	0.33	1.56
20041102000000	20041102	805	35.68	-120.32	17.18	-0.09	1.14
20041102000000	20041102	814	35.60	-120.26	20.91	0.02	1.25

20041104000000	20041104	0	35.70	-120.22	32.22	0.25	1.48
20041105000000	20041105	2337	35.67	-120.27	21.51	0.03	1.26
20041109000000	20041109	617	35.66	-120.22	22.48	0.47	1.70
20041109000000	20041109	853	35.68	-120.35	17.40	-0.06	1.17
20041110000000	20041110	2131	35.80	-120.25	12.81	-0.17	1.06
20041111000000	20041111	330	35.74	-120.31	23.57	0.23	1.46
20041114000000	20041114	1215	35.67	-120.27	26.83	0.42	1.65
20041116000000	20041116	828	35.77	-120.26	18.01	-0.22	1.01
20041116000000	20041116	1643	35.81	-120.26	29.47	-0.02	1.21
20041122000000	20041122	1228	35.69	-120.27	17.16	0.26	1.49
20041124000000	20041124	822	35.49	-120.07	35.78	0.56	1.79
20041124000000	20041124	1727	35.68	-120.31	24.34	0.11	1.34
20041124000000	20041124	1935	35.66	-120.29	24.17	0.32	1.55
20041124000000	20041124	2231	35.72	-120.37	22.74	0.07	1.30
20041125000000	20041125	623	35.70	-120.30	22.99	0.38	1.61
20041126000000	20041126	345	35.68	-120.33	23.49	0.08	1.31
20041126000000	20041126	954	35.67	-120.32	20.26	-0.01	1.22
20041201000000	20041201	1047	35.66	-120.31	18.08	0.34	1.57
20041207000000	20041207	430	35.65	-120.36	37.38	0.48	1.71
20041208000000	20041208	1211	35.75	-120.24	24.27	-0.13	1.10
20041210000000	20041210	1240	35.66	-120.29	26.33	-0.13	1.10
20041214000000	20041214	108	35.67	-120.30	24.38	0.26	1.49
20041214000000	20041214	829	35.65	-120.14	34.34	0.40	1.63
20041217000000	20041217	727	35.66	-120.40	22.72	0.18	1.41
20041219000000	20041219	1835	35.64	-120.27	17.16	0.14	1.37
20041224000000	20041224	629	35.71	-120.23	26.16	0.13	1.36
20041226000000	20041226	224	35.67	-120.26	22.22	0.18	1.41
20050105000000	20050105	1239	35.69	-120.27	28.46	-0.02	1.21
20050106000000	20050106	156	35.62	-120.25	18.90	0.10	1.33
20050106000000	20050106	206	35.65	-120.35	18.49	0.04	1.27
20050106000000	20050106	740	35.66	-120.33	26.33	0.06	1.29
20050106000000	20050106	918	35.71	-120.28	29.83	0.28	1.51
20050106000000	20050106	932	35.67	-120.32	17.71	-0.15	1.08

20050106000000	20050106	936	35.76	-120.21	27.37	0.36	1.59
20050106000000	20050106	1828	35.66	-120.26	21.20	-0.05	1.18
20050116000000	20050116	2059	35.73	-120.25	16.84	-0.14	1.09
20050118000000	20050118	421	35.56	-120.17	32.42	0.22	1.45
20050121000000	20050121	732	35.64	-120.25	18.84	0.16	1.39
20050124000000	20050124	1437	35.62	-120.17	30.67	0.31	1.54
20050124000000	20050124	1449	35.67	-120.28	15.22	0.17	1.40
20050126000000	20050126	1456	35.75	-120.21	43.23	0.43	1.66
20050127000000	20050127	1659	35.77	-120.31	14.76	-0.21	1.02
20050204000000	20050204	700	35.67	-120.30	21.86	0.39	1.62
20050209000000	20050209	1547	35.74	-120.30	28.12	0.35	1.58
20050209000000	20050209	1605	35.66	-120.21	16.30	0.03	1.26
20050213000000	20050213	1311	35.56	-120.22	23.76	-0.06	1.17
20050213000000	20050213	1325	35.65	-120.27	15.21	0.16	1.39
20050216000000	20050216	359	35.74	-120.11	22.72	0.36	1.59
20050219000000	20050219	526	35.61	-120.60	14.59	-0.09	1.14
20050219000000	20050219	533	35.68	-120.13	36.65	0.35	1.58
20050224000000	20050224	1240	35.66	-119.93	40.09	0.46	1.69
20050225000000	20050225	516	35.62	-120.29	17.13	0.20	1.43
20050225000000	20050225	731	35.67	-120.18	21.79	-0.03	1.20
20050225000000	20050225	1339	35.79	-120.25	21.42	0.06	1.29
20050226000000	20050226	1534	35.83	-120.15	19.86	-0.26	0.97
20050227000000	20050227	39	35.82	-120.31	19.19	-0.29	0.94
20050227000000	20050227	459	35.65	-120.31	28.55	0.30	1.53
20050227000000	20050227	1621	35.39	-120.38	21.93	0.67	1.90
20050227000000	20050227	2327	35.55	-120.11	29.69	0.48	1.71
20050228000000	20050228	846	35.40	-120.32	4.50	0.72	1.95
20050301000000	20050301	2123	35.62	-120.32	25.90	0.36	1.59
20050302000000	20050302	58	35.62	-120.20	25.62	0.47	1.70
20050306000000	20050306	1205	35.79	-120.27	40.00	-0.06	1.17
20050308000000	20050308	744	35.63	-120.16	22.59	-0.18	1.05
20050308000000	20050308	1503	35.69	-120.25	34.89	0.41	1.64
20050309000000	20050309	1511	35.66	-120.29	23.48	0.40	1.63

20050310000000	20050310	1411	35.70	-120.31	24.28	0.09	1.32
20050312000000	20050312	547	35.68	-120.24	18.00	0.08	1.31
20050322000000	20050322	1058	35.44	-120.46	12.95	0.35	1.58
20050322000000	20050322	1118	35.72	-120.27	18.12	0.34	1.57
20050327000000	20050327	354	35.75	-120.35	14.34	-0.55	0.68
20050330000000	20050330	424	35.63	-120.32	20.61	0.10	1.33
20050403000000	20050403	206	35.71	-120.14	37.88	0.44	1.67
20050403000000	20050403	214	35.67	-120.33	20.35	-0.05	1.18
20050403000000	20050403	221	35.75	-120.29	42.01	0.33	1.56
20050407000000	20050407	123	35.66	-120.26	27.90	0.38	1.61
20050416000000	20050416	25	35.81	-120.09	22.78	0.48	1.71
20050424000000	20050424	16	35.73	-120.23	39.88	0.13	1.36
20050424000000	20050424	1038	35.67	-120.40	15.94	-0.11	1.12
20050424000000	20050424	1416	35.65	-120.29	26.08	0.39	1.62
20050424000000	20050424	1438	35.67	-120.29	21.22	0.16	1.39
20050424000000	20050424	1639	35.62	-120.31	20.75	0.05	1.28
20050424000000	20050424	2227	35.60	-120.26	25.27	0.01	1.24
20050425000000	20050425	121	35.66	-120.27	26.30	0.08	1.31
20050425000000	20050425	127	35.62	-120.17	28.87	0.27	1.50
20050425000000	20050425	1334	35.68	-120.29	21.86	-0.05	1.18
20050426000000	20050426	258	35.66	-120.27	21.76	0.10	1.33
20050426000000	20050426	2218	35.62	-120.34	22.30	0.19	1.42
20050427000000	20050427	350	35.63	-120.17	25.93	0.21	1.44
20050427000000	20050427	1115	35.58	-120.21	27.43	0.19	1.42
20050427000000	20050427	1736	35.66	-120.16	26.81	0.11	1.34
20050427000000	20050427	2105	35.65	-120.24	21.16	0.45	1.68
20050428000000	20050428	213	35.54	-119.94	27.74	0.69	1.92
20050428000000	20050428	2130	35.72	-120.24	21.53	0.00	1.23
20050430000000	20050430	305	35.64	-120.28	19.70	0.17	1.40
20050504000000	20050504	1252	35.78	-120.31	21.43	0.02	1.25
20050510000000	20050510	1952	35.58	-120.15	26.33	0.38	1.61
20050514000000	20050514	535	35.71	-120.27	19.91	-0.13	1.10
20050515000000	20050515	1946	35.65	-120.22	14.31	0.10	1.33

20050525000000	20050525	2048	35.63	-120.22	26.41	0.44	1.67
20050530000000	20050530	559	35.66	-120.21	30.30	0.29	1.52
20050609000000	20050609	409	35.74	-120.23	24.20	0.55	1.78
20050623000000	20050623	37	35.42	-120.41	15.31	0.33	1.56
20050623000000	20050623	2120	35.46	-120.29	13.33	0.14	1.37
20050706000000	20050706	53	35.70	-120.33	12.36	0.14	1.37
20050712000000	20050712	638	35.68	-120.27	22.82	0.56	1.79
20050720000000	20050720	1729	35.58	-120.07	9.92	0.46	1.69
20050720000000	20050720	1739	35.65	-120.23	24.85	-0.04	1.19
20050722000000	20050722	34	35.59	-120.34	21.88	-0.11	1.12
20050723000000	20050723	443	35.67	-120.29	18.66	-0.10	1.13
20050723000000	20050723	1552	35.79	-120.32	17.61	-0.35	0.88
20050723000000	20050723	2159	35.65	-120.26	23.65	0.21	1.44
20050724000000	20050724	227	35.72	-120.31	26.54	-0.10	1.13
20050724000000	20050724	520	35.70	-120.29	21.65	-0.04	1.19
20050724000000	20050724	547	35.69	-120.27	24.66	0.12	1.35
20050724000000	20050724	620	35.71	-120.33	21.33	-0.15	1.08
20050724000000	20050724	625	35.69	-120.30	24.77	0.15	1.38
20050724000000	20050724	631	35.67	-120.21	25.43	0.51	1.74
20050724000000	20050724	705	35.66	-120.32	20.01	0.13	1.36
20050725000000	20050725	325	35.70	-120.31	18.70	-0.07	1.16
20050725000000	20050725	519	35.64	-120.32	20.47	-0.04	1.19
20050725000000	20050725	1741	35.62	-120.22	17.93	-0.11	1.12
20050727000000	20050727	326	35.68	-120.30	21.21	0.13	1.36
20050727000000	20050727	332	35.71	-120.31	28.92	-0.08	1.15
20050727000000	20050727	2259	35.66	-120.21	27.27	0.28	1.51
20050728000000	20050728	917	35.69	-120.31	26.01	0.21	1.44
20050728000000	20050728	2020	35.72	-120.11	21.72	0.07	1.30
20050730000000	20050730	238	35.77	-120.31	18.65	-0.49	0.74
20050731000000	20050731	657	35.70	-120.27	18.98	0.05	1.28
20050802000000	20050802	1646	35.77	-120.21	16.39	-0.08	1.15
20050806000000	20050806	211	35.67	-120.31	20.16	0.38	1.61
20050806000000	20050806	223	35.60	-120.20	14.65	0.16	1.39

20050809000000	20050809	401	35.69	-120.21	22.64	0.40	1.63
20050811000000	20050811	501	35.68	-120.29	24.60	-0.15	1.08
20050813000000	20050813	1927	35.66	-120.20	8.60	-0.08	1.15
20050813000000	20050813	1936	35.56	-120.42	35.53	0.17	1.40
20050816000000	20050816	2129	35.65	-119.97	17.62	0.81	2.04
20050822000000	20050822	121	35.58	-120.20	22.50	0.32	1.55
20050827000000	20050827	635	35.67	-120.32	15.35	0.03	1.26
20050831000000	20050831	229	35.66	-120.28	19.12	0.13	1.36
20050903000000	20050903	1315	35.71	-120.32	22.67	0.04	1.27
20050903000000	20050903	1321	35.78	-120.31	25.80	-0.22	1.01
20050910000000	20050910	1632	35.68	-120.30	21.79	0.37	1.60
20050914000000	20050914	239	35.72	-120.26	19.47	0.05	1.28
20050916000000	20050916	20	35.63	-120.31	20.22	0.21	1.44
20050916000000	20050916	36	35.66	-120.29	24.87	-0.02	1.21
20050916000000	20050916	1256	35.66	-120.30	20.02	0.20	1.43
20050917000000	20050917	2345	35.66	-120.31	17.05	-0.06	1.17
20050918000000	20050918	2251	35.64	-120.29	20.15	0.01	1.24
20050921000000	20050921	54	35.69	-120.18	32.68	0.30	1.53
20050922000000	20050922	1426	35.60	-120.22	14.53	0.06	1.29
20050922000000	20050922	1636	35.68	-120.26	17.50	0.29	1.52
20050925000000	20050925	1102	35.65	-120.17	23.05	0.24	1.47
20050925000000	20050925	1112	35.63	-120.14	26.24	0.12	1.35
20050926000000	20050926	415	35.76	-120.37	18.96	-0.43	0.80
20050926000000	20050926	2313	35.76	-120.32	22.81	-0.37	0.86
20050927000000	20050927	453	35.66	-120.27	14.85	-0.30	0.93
20050927000000	20050927	834	35.68	-120.37	15.74	-0.21	1.02
20050927000000	20050927	837	35.69	-120.32	17.58	-0.19	1.04
20050927000000	20050927	934	35.69	-120.28	15.59	0.01	1.24
20050927000000	20050927	1410	35.67	-120.31	23.86	0.16	1.39
20050930000000	20050930	208	35.68	-120.22	18.78	-0.18	1.05
20051003000000	20051003	1730	35.72	-120.18	26.48	0.54	1.77
20051005000000	20051005	1222	35.61	-120.18	19.03	0.18	1.41
20051007000000	20051007	841	35.62	-120.23	19.32	0.07	1.30

20051017000000	20051017	2344	35.63	-120.22	14.77	-0.04	1.19
20051025000000	20051025	121	35.69	-120.29	24.48	0.04	1.27
20051027000000	20051027	937	35.66	-120.16	27.96	0.16	1.39
20051031000000	20051031	545	35.63	-120.32	14.02	0.05	1.28
20051104000000	20051104	2254	35.61	-120.15	39.94	0.47	1.70
20051106000000	20051106	525	35.61	-120.19	23.19	0.21	1.44
20051107000000	20051107	629	35.69	-120.07	31.73	0.15	1.38
20051110000000	20051110	1112	35.60	-120.26	27.87	0.01	1.24
20051112000000	20051112	840	35.68	-120.29	22.92	0.33	1.56
20051116000000	20051116	603	35.66	-120.26	17.53	-0.03	1.20
20051121000000	20051121	312	35.66	-120.20	17.40	0.12	1.35
20051125000000	20051125	1407	35.60	-120.22	20.82	0.45	1.68
20051126000000	20051126	1502	35.74	-120.08	44.26	0.55	1.78
20051127000000	20051127	1200	35.72	-120.28	21.60	-0.06	1.17
20051128000000	20051128	521	35.60	-120.17	27.23	0.32	1.55
20051129000000	20051129	718	35.64	-120.33	21.27	0.32	1.55
20051129000000	20051129	1337	35.69	-120.22	23.68	0.00	1.23
20051201000000	20051201	27	35.66	-120.25	22.48	0.34	1.57
20051202000000	20051202	410	35.65	-120.14	32.33	0.48	1.71
20051204000000	20051204	259	35.61	-120.00	31.38	0.48	1.71
20051210000000	20051210	1100	35.70	-120.28	21.13	0.28	1.51
20051215000000	20051215	633	35.62	-120.09	24.62	0.37	1.60
20051219000000	20051219	1458	35.64	-120.11	31.00	0.66	1.89
20051231000000	20051231	920	35.75	-120.22	24.19	0.09	1.32
20060102000000	20060102	902	35.56	-120.20	41.30	0.72	1.95
20060107000000	20060107	857	35.64	-120.31	19.84	-0.06	1.17
20060108000000	20060108	745	35.62	-120.28	18.65	0.12	1.35
20060113000000	20060113	706	35.68	-120.26	17.89	0.28	1.51
20060119000000	20060119	1530	35.62	-120.21	24.99	0.19	1.42
20060121000000	20060121	414	35.67	-120.26	17.39	0.13	1.36
20060125000000	20060125	304	35.59	-120.16	22.56	0.10	1.33
20060125000000	20060125	313	35.69	-120.27	20.91	0.05	1.28
20060126000000	20060126	202	35.83	-119.91	17.12	0.02	1.25

20060128000000	20060128	251	35.66	-120.23	23.26	0.32	1.55
20060129000000	20060129	422	35.68	-120.31	22.69	-0.07	1.16
20060129000000	20060129	1928	35.68	-120.31	25.13	0.08	1.31
20060129000000	20060129	2143	35.69	-120.34	22.35	0.08	1.31
20060129000000	20060129	2348	35.70	-120.35	23.51	0.15	1.38
20060130000000	20060130	701	35.65	-120.27	23.99	0.13	1.36
20060130000000	20060130	707	35.65	-120.30	16.44	0.00	1.23
20060130000000	20060130	712	35.60	-120.22	20.85	0.01	1.24
20060130000000	20060130	1327	35.67	-120.28	24.82	0.05	1.28
20060130000000	20060130	1815	35.71	-120.35	29.07	-0.03	1.20
20060131000000	20060131	406	35.66	-120.29	18.29	0.38	1.61
20060201000000	20060201	824	35.66	-120.27	21.54	0.43	1.66
20060201000000	20060201	1809	35.60	-120.19	39.94	0.76	1.99
20060202000000	20060202	403	35.65	-120.33	21.29	0.35	1.58
20060203000000	20060203	937	35.70	-120.30	22.15	0.09	1.32
20060204000000	20060204	57	35.62	-120.16	30.75	0.23	1.46
20060205000000	20060205	458	35.55	-120.26	38.31	0.95	2.18
20060209000000	20060209	1033	35.60	-120.22	20.66	0.17	1.40
20060211000000	20060211	421	35.69	-120.28	24.93	0.49	1.72
20060213000000	20060213	1816	35.62	-120.33	15.47	-0.07	1.16
20060220000000	20060220	2248	35.65	-120.32	17.61	0.46	1.69
20060221000000	20060221	1741	35.60	-120.20	18.23	0.38	1.61
20060224000000	20060224	1605	35.66	-120.31	20.38	0.18	1.41
20060225000000	20060225	1402	35.66	-120.29	17.88	0.22	1.45
20060226000000	20060226	945	35.71	-120.32	20.36	-0.23	1.00
20060324000000	20060324	512	35.71	-120.24	23.16	0.12	1.35
20060406000000	20060406	429	35.55	-120.67	11.45	0.42	1.65
20060406000000	20060406	633	35.72	-120.16	17.36	-0.22	1.01
20060413000000	20060413	332	35.77	-120.04	22.29	0.09	1.32
20060422000000	20060422	340	35.75	-120.30	16.47	0.05	1.28
20060426000000	20060426	1217	35.75	-120.28	17.64	-0.08	1.15
20060426000000	20060426	1832	35.39	-120.38	32.58	0.43	1.66
20060427000000	20060427	31	35.74	-120.04	38.52	0.70	1.93

20060427000000	20060427	1152	35.70	-120.34	22.45	0.14	1.37
20060427000000	20060427	1200	35.70	-120.23	31.67	0.14	1.37
20060428000000	20060428	1243	35.67	-120.20	34.18	0.33	1.56
20060502000000	20060502	356	35.74	-120.12	30.64	0.63	1.86
20060503000000	20060503	1451	35.65	-120.27	20.42	-0.13	1.10
20060505000000	20060505	52	35.68	-120.26	16.65	0.24	1.47
20060507000000	20060507	35	35.65	-120.27	14.99	0.04	1.27
20060517000000	20060517	359	35.64	-120.30	14.70	0.36	1.59
20060524000000	20060524	100	35.65	-120.28	14.91	0.50	1.73
20060530000000	20060530	430	35.58	-120.18	20.98	0.46	1.69
20060603000000	20060603	1852	35.71	-120.23	30.10	0.51	1.74
20060608000000	20060608	2027	35.73	-120.32	14.02	0.32	1.55
20060615000000	20060615	2045	35.66	-120.22	25.96	0.62	1.85
20060619000000	20060619	133	35.73	-120.28	22.11	-0.08	1.15
20060620000000	20060620	2213	35.65	-120.18	27.64	0.10	1.33
20060625000000	20060625	252	35.77	-120.21	27.50	-0.01	1.22
20060625000000	20060625	257	35.72	-120.25	19.39	-0.08	1.15
20060628000000	20060628	1843	35.60	-120.10	34.01	0.44	1.67
20060629000000	20060629	1443	35.60	-119.93	19.54	0.52	1.75
20060630000000	20060630	629	35.68	-120.29	26.21	0.04	1.27
20060630000000	20060630	1808	35.64	-120.14	23.71	0.20	1.43
20060701000000	20060701	618	35.64	-120.30	19.00	0.01	1.24
20060701000000	20060701	1943	35.62	-120.34	23.25	0.50	1.73
20060702000000	20060702	1009	35.64	-120.27	19.57	0.29	1.52
20060703000000	20060703	1801	35.66	-120.25	28.37	0.03	1.26
20060703000000	20060703	1809	35.64	-120.28	28.90	0.00	1.23
20060706000000	20060706	108	35.75	-120.20	28.30	0.25	1.48
20060726000000	20060726	2032	35.81	-119.98	48.96	0.42	1.65
20060730000000	20060730	341	35.64	-120.26	24.62	0.08	1.31
20060730000000	20060730	352	35.80	-120.14	34.28	0.16	1.39
20060809000000	20060809	1552	35.65	-120.27	28.75	0.49	1.72
20060813000000	20060813	433	35.71	-120.31	21.05	0.18	1.41
20060814000000	20060814	1743	35.67	-120.31	37.92	0.47	1.70

20060821000000	20060821	47	35.68	-120.26	21.54	0.31	1.54
20060907000000	20060907	102	35.63	-120.23	27.97	0.16	1.39
20060911000000	20060911	1519	35.80	-119.79	30.87	0.58	1.81
20060913000000	20060913	1632	35.72	-120.22	22.24	0.22	1.45
20060913000000	20060913	1641	35.64	-120.39	25.05	-0.21	1.02
20060913000000	20060913	1644	35.71	-120.24	16.76	0.11	1.34
20060915000000	20060915	1516	35.75	-120.23	16.37	0.20	1.43
20060915000000	20060915	1936	35.60	-120.34	26.28	0.21	1.44
20060916000000	20060916	2016	35.75	-120.16	31.42	0.72	1.95
20060920000000	20060920	1849	35.77	-120.26	17.86	0.33	1.56
20060920000000	20060920	1900	35.68	-120.03	29.77	0.44	1.67
20060923000000	20060923	330	35.67	-120.26	18.91	0.17	1.40
20060928000000	20060928	127	35.70	-120.32	22.06	-0.04	1.19
20060930000000	20060930	1131	35.68	-120.33	21.92	0.15	1.38
20061005000000	20061005	129	35.73	-120.30	16.66	0.22	1.45
20061007000000	20061007	1343	35.69	-120.28	21.26	0.07	1.30
20061011000000	20061011	1647	35.69	-120.31	18.32	0.04	1.27
20061023000000	20061023	1211	35.76	-120.29	21.18	-0.23	1.00
20061031000000	20061031	1104	35.67	-120.30	19.16	0.45	1.68
20061102000000	20061102	843	35.68	-120.30	21.99	-0.09	1.14
20061105000000	20061105	1148	35.63	-120.15	21.54	0.15	1.38
20061105000000	20061105	1154	35.65	-120.28	17.72	-0.04	1.19
20061108000000	20061108	1527	35.75	-120.19	28.96	0.49	1.72
20061114000000	20061114	22	35.73	-120.15	20.89	0.45	1.68
20061124000000	20061124	1216	35.70	-120.27	18.27	-0.20	1.03
20061126000000	20061126	2002	35.65	-120.26	25.81	0.00	1.23
20061130000000	20061130	1257	35.70	-120.33	28.48	0.17	1.40
20061130000000	20061130	1511	35.61	-120.18	32.26	0.26	1.49
20061130000000	20061130	1612	35.67	-120.32	15.99	0.08	1.31
20061130000000	20061130	1658	35.67	-120.32	25.64	0.17	1.40
20061130000000	20061130	2103	35.67	-120.38	24.33	0.20	1.43
20061201000000	20061201	102	35.68	-120.26	21.85	-0.13	1.10
20061201000000	20061201	123	35.71	-120.30	28.38	0.08	1.31

20061201000000	20061201	640	35.67	-120.35	20.71	-0.14	1.09
20061201000000	20061201	1140	35.68	-120.33	22.92	0.01	1.24
20061201000000	20061201	1828	35.70	-120.32	23.29	-0.03	1.20
20061202000000	20061202	132	35.66	-120.32	15.53	0.17	1.40
20061202000000	20061202	139	35.74	-120.26	28.45	0.26	1.49
20061202000000	20061202	923	35.68	-120.33	23.71	0.08	1.31
20061202000000	20061202	957	35.67	-120.45	32.23	-0.15	1.08
20061202000000	20061202	2331	35.66	-120.30	20.52	0.23	1.46
20061205000000	20061205	808	35.67	-120.29	19.58	0.44	1.67
20061206000000	20061206	738	35.65	-120.18	31.65	-0.02	1.21
20061206000000	20061206	1221	35.62	-120.20	31.17	0.10	1.33
20061207000000	20061207	1101	35.63	-120.27	16.97	0.41	1.64
20061212000000	20061212	603	35.69	-120.26	21.26	0.18	1.41
20061212000000	20061212	610	35.60	-120.26	15.48	0.15	1.38
20061214000000	20061214	1412	35.66	-120.23	28.33	0.43	1.66
20061215000000	20061215	2345	35.68	-120.19	33.86	0.15	1.38
20061219000000	20061219	1317	35.66	-120.31	15.66	0.34	1.57
20061222000000	20061222	1719	35.57	-120.34	22.46	0.03	1.26
20061225000000	20061225	652	35.68	-120.29	18.51	0.00	1.23
20061226000000	20061226	949	35.68	-120.28	18.84	-0.10	1.13
20061230000000	20061230	1041	35.67	-120.29	18.53	0.16	1.39
20070101000000	20070101	511	35.58	-120.07	29.93	0.49	1.72
20070105000000	20070105	418	35.71	-120.21	29.98	0.62	1.85
20070109000000	20070109	1635	35.73	-120.27	19.39	0.01	1.24
20070115000000	20070115	925	35.71	-120.05	28.46	0.22	1.45
20070116000000	20070116	1232	35.60	-120.25	19.80	0.04	1.27
20070122000000	20070122	1929	35.63	-120.28	21.87	0.50	1.73
20070124000000	20070124	1948	35.67	-120.27	32.59	0.23	1.46
20070125000000	20070125	115	35.62	-120.30	17.32	0.23	1.46
20070129000000	20070129	1148	35.67	-120.31	19.15	0.36	1.59
20070201000000	20070201	1322	35.69	-120.29	18.45	-0.19	1.04
20070204000000	20070204	349	35.62	-120.24	19.55	0.05	1.28
20070207000000	20070207	241	35.71	-120.22	21.81	0.39	1.62

20070211000000	20070211	202	35.70	-120.35	22.98	0.35	1.58
20070215000000	20070215	1124	35.70	-120.30	15.30	0.05	1.28
20070217000000	20070217	1456	35.68	-120.28	28.52	0.04	1.27
20070218000000	20070218	454	35.75	-120.31	19.96	-0.24	0.99
20070218000000	20070218	715	35.70	-120.19	39.94	0.21	1.44
20070218000000	20070218	850	35.67	-120.31	20.56	0.24	1.47
20070219000000	20070219	223	35.60	-120.31	16.81	0.28	1.51
20070219000000	20070219	953	35.57	-120.25	21.67	0.23	1.46
20070219000000	20070219	1505	35.68	-120.27	27.30	0.52	1.75
20070220000000	20070220	46	35.65	-120.35	21.56	0.08	1.31
20070220000000	20070220	1335	35.62	-120.27	18.31	0.45	1.68
20070221000000	20070221	1601	35.61	-120.23	15.32	0.38	1.61
20070223000000	20070223	142	35.59	-120.27	15.78	0.57	1.80
20070301000000	20070301	612	35.67	-120.34	18.10	0.56	1.79
20070302000000	20070302	1414	35.71	-120.29	19.75	0.19	1.42
20070305000000	20070305	538	35.65	-120.18	8.58	-0.01	1.22
20070305000000	20070305	638	35.69	-120.32	17.38	-0.11	1.12
20070309000000	20070309	1849	35.61	-120.17	29.50	0.35	1.58
20070310000000	20070310	1146	35.69	-120.29	17.83	0.41	1.64
20070312000000	20070312	721	35.72	-120.17	26.84	0.12	1.35
20070314000000	20070314	20	35.63	-120.15	25.33	0.24	1.47
20070317000000	20070317	1352	35.64	-120.29	16.37	0.07	1.30
20070319000000	20070319	1241	35.67	-120.10	18.25	-0.05	1.18
20070326000000	20070326	730	35.67	-120.30	19.24	0.00	1.23
20070331000000	20070331	1157	35.67	-120.26	21.94	0.14	1.37
20070331000000	20070331	1205	35.67	-120.15	18.56	0.09	1.32
20070417000000	20070417	211	35.65	-120.29	19.88	0.41	1.64
20070423000000	20070423	1444	35.74	-120.22	24.80	-0.03	1.20
20070427000000	20070427	1808	35.66	-120.26	24.46	0.27	1.50
20070430000000	20070430	1734	35.67	-120.18	32.85	0.11	1.34
20070505000000	20070505	823	35.74	-120.13	39.60	0.32	1.55
20070505000000	20070505	1307	35.66	-120.28	18.46	0.35	1.58
20070505000000	20070505	1932	35.51	-120.13	30.32	0.47	1.70

20070506000000	20070506	206	35.68	-120.26	22.80	0.07	1.30
20070506000000	20070506	1747	35.66	-120.24	23.36	0.41	1.64
20070506000000	20070506	2021	35.63	-120.17	34.98	0.73	1.96
20070507000000	20070507	22	35.64	-120.15	25.28	0.40	1.63
20070507000000	20070507	1217	35.69	-120.35	25.13	0.10	1.33
20070507000000	20070507	1904	35.67	-120.31	21.20	0.11	1.34
20070507000000	20070507	2300	35.59	-120.20	30.09	0.30	1.53
20070508000000	20070508	1207	35.68	-120.31	18.17	0.01	1.24
20070508000000	20070508	2157	35.71	-120.31	18.49	0.14	1.37
20070509000000	20070509	1500	35.62	-120.04	36.21	0.39	1.62
20070509000000	20070509	2234	35.66	-120.33	16.12	0.10	1.33
20070510000000	20070510	2119	35.64	-120.21	21.27	0.03	1.26
20070512000000	20070512	110	35.65	-120.32	13.37	0.15	1.38
20070518000000	20070518	441	35.75	-120.29	13.09	-0.25	0.98
20070523000000	20070523	2118	35.66	-120.28	18.27	0.43	1.66
20070527000000	20070527	713	35.66	-120.22	41.60	0.34	1.57
20070530000000	20070530	2125	35.69	-120.25	12.17	0.05	1.28
20070604000000	20070604	2333	35.62	-120.33	15.27	0.50	1.73
20070617000000	20070617	1755	35.72	-120.18	18.95	0.00	1.23
20070617000000	20070617	1803	35.65	-120.25	19.18	0.45	1.68
20070620000000	20070620	541	35.65	-120.16	22.74	0.16	1.39
20070707000000	20070707	1020	35.68	-120.25	20.84	0.05	1.28
20070716000000	20070716	2135	35.69	-120.28	19.87	0.26	1.49
20070717000000	20070717	424	35.71	-120.31	21.65	0.14	1.37
20070717000000	20070717	430	35.71	-120.26	23.47	-0.07	1.16
20070717000000	20070717	1706	35.65	-120.29	28.43	0.56	1.79
20070718000000	20070718	428	35.54	-120.16	30.09	0.28	1.51
20070718000000	20070718	1726	35.64	-120.26	27.37	0.47	1.70
20070719000000	20070719	1204	35.69	-120.13	27.25	0.18	1.41
20070821000000	20070821	407	35.61	-120.29	14.16	0.01	1.24
20070821000000	20070821	415	35.66	-120.25	20.36	0.03	1.26
20070826000000	20070826	2316	35.57	-120.14	31.52	0.41	1.64
20070831000000	20070831	1857	35.73	-120.25	18.78	-0.04	1.19

20070906000000	20070906	1753	35.63	-120.26	27.21	0.55	1.78
20070908000000	20070908	1701	35.68	-120.29	23.77	0.19	1.42
20070911000000	20070911	721	35.67	-120.19	28.15	0.04	1.27
20070911000000	20070911	725	35.66	-120.08	24.30	0.39	1.62
20070914000000	20070914	1504	35.65	-120.25	29.67	0.36	1.59
20070916000000	20070916	1440	35.60	-120.18	21.88	0.13	1.36
20070920000000	20070920	1216	35.69	-120.23	23.00	0.55	1.78
20070927000000	20070927	425	35.68	-120.25	23.52	0.09	1.32
20071005000000	20071005	1444	35.63	-120.17	19.56	0.30	1.53
20071006000000	20071006	1131	35.69	-120.31	25.02	0.07	1.30
20071006000000	20071006	1306	35.65	-120.29	39.94	0.49	1.72
20071006000000	20071006	1408	35.70	-120.31	27.99	0.00	1.23
20071006000000	20071006	1623	35.70	-120.32	19.14	0.17	1.40
20071006000000	20071006	1832	35.71	-120.21	37.19	0.20	1.43
20071006000000	20071006	2229	35.98	-119.93	38.86	0.38	1.61
20071007000000	20071007	159	35.79	-120.15	39.13	0.47	1.70
20071007000000	20071007	1200	35.76	-120.10	40.02	0.47	1.70
20071007000000	20071007	1225	35.63	-120.25	29.79	0.52	1.75
20071007000000	20071007	2211	35.67	-120.27	19.35	0.47	1.70
20071008000000	20071008	842	35.69	-120.25	23.93	0.38	1.61
20071008000000	20071008	2315	35.57	-120.47	35.53	0.07	1.30
20071009000000	20071009	148	35.73	-120.18	40.01	0.64	1.87
20071009000000	20071009	1330	35.61	-120.14	39.54	0.62	1.85
20071010000000	20071010	14	35.62	-120.23	24.15	0.32	1.55
20071011000000	20071011	723	35.68	-120.24	24.17	0.42	1.65
20071013000000	20071013	913	35.66	-120.29	23.82	0.45	1.68
20071014000000	20071014	1403	35.67	-120.36	17.14	-0.22	1.01
20071016000000	20071016	1313	35.62	-120.27	20.55	0.19	1.42
20071020000000	20071020	50	35.70	-120.33	17.05	-0.11	1.12
20071021000000	20071021	2321	35.72	-120.25	35.02	0.25	1.48
20071026000000	20071026	1333	35.64	-120.27	28.16	0.47	1.70
20071029000000	20071029	1535	35.59	-120.15	25.16	0.18	1.41
20071106000000	20071106	52	35.69	-120.30	19.36	0.16	1.39

20071116000000	20071116	1203	35.62	-120.19	14.45	0.14	1.37
20071127000000	20071127	312	35.69	-120.24	28.12	0.14	1.37
20071128000000	20071128	929	35.63	-120.19	25.44	0.16	1.39
20071128000000	20071128	939	35.64	-120.19	19.89	0.16	1.39
20071203000000	20071203	1852	35.61	-120.16	42.30	0.29	1.52
20071213000000	20071213	546	35.64	-120.28	22.78	0.49	1.72
20071215000000	20071215	923	35.61	-120.28	13.80	-0.04	1.19
20071218000000	20071218	752	35.63	-120.26	23.53	0.45	1.68
20080103000000	20080103	729	35.72	-120.29	20.59	-0.38	0.85
20080103000000	20080103	735	35.69	-120.32	24.55	0.08	1.31
20080105000000	20080105	1505	35.38	-119.67	67.04	1.35	2.58
20080110000000	20080110	1747	35.66	-120.19	30.65	0.55	1.78
20080110000000	20080110	2057	35.67	-120.34	20.22	-0.06	1.17
20080111000000	20080111	40	35.65	-120.04	26.39	0.17	1.40
20080111000000	20080111	730	35.64	-120.38	11.44	0.04	1.27
20080111000000	20080111	1926	35.67	-120.30	14.12	-0.01	1.22
20080112000000	20080112	636	35.55	-120.17	32.60	0.30	1.53
20080112000000	20080112	1233	35.67	-120.34	23.97	0.01	1.24
20080112000000	20080112	1254	35.68	-120.33	15.62	0.04	1.27
20080112000000	20080112	1406	35.70	-120.31	20.05	0.16	1.39
20080112000000	20080112	2135	35.68	-120.20	30.45	0.04	1.27
20080112000000	20080112	2140	35.59	-120.22	24.26	0.21	1.44
20080112000000	20080112	2149	35.72	-120.29	24.98	0.26	1.49
20080113000000	20080113	829	35.68	-120.25	21.61	0.34	1.57
20080113000000	20080113	1602	35.60	-120.23	25.02	0.18	1.41
20080113000000	20080113	1931	35.65	-119.95	41.07	0.33	1.56
20080114000000	20080114	656	35.67	-120.27	25.85	-0.13	1.10
20080115000000	20080115	339	35.61	-119.99	35.81	0.62	1.85
20080117000000	20080117	558	35.64	-120.31	27.86	0.52	1.75
20080119000000	20080119	25	35.63	-120.32	22.66	0.00	1.23
20080120000000	20080120	113	35.61	-120.32	25.01	0.18	1.41
20080123000000	20080123	1239	35.64	-120.20	17.71	0.22	1.45
20080131000000	20080131	602	35.65	-120.13	25.49	0.31	1.54

20080205000000	20080205	1018	35.60	-120.19	26.06	0.34	1.57
20080215000000	20080215	150	35.67	-120.27	18.94	0.07	1.30
20080216000000	20080216	459	35.68	-120.20	27.47	0.07	1.30
20080222000000	20080222	1124	35.63	-120.29	24.45	0.47	1.70
20080302000000	20080302	202	35.72	-120.05	34.75	0.22	1.45
20080304000000	20080304	2347	35.61	-120.33	10.23	-0.11	1.12
20080305000000	20080305	4	35.57	-120.25	3.18	0.06	1.29
20080308000000	20080308	1541	35.65	-120.30	23.70	0.00	1.23
20080314000000	20080314	2207	35.62	-120.33	12.20	0.50	1.73
20080319000000	20080319	1148	35.37	-120.00	39.28	0.49	1.72
20080319000000	20080319	1155	35.69	-120.16	32.65	0.56	1.79
20080325000000	20080325	2111	35.68	-120.22	20.87	0.38	1.61
20080331000000	20080331	540	35.69	-120.16	29.04	0.64	1.87
20080404000000	20080404	0	35.70	-120.21	23.34	-0.06	1.17
20080410000000	20080410	55	35.66	-120.32	18.05	0.37	1.60
20080410000000	20080410	105	35.60	-120.30	19.90	0.14	1.37
20080413000000	20080413	401	35.71	-120.27	12.47	-0.07	1.16
20080420000000	20080420	1016	35.73	-120.20	30.65	0.03	1.26
20080422000000	20080422	2116	35.60	-120.22	22.80	0.14	1.37
20080422000000	20080422	2122	35.66	-120.29	18.49	0.29	1.52
20080427000000	20080427	1629	35.68	-120.23	28.82	0.14	1.37
20080429000000	20080429	1136	35.66	-120.33	16.90	-0.15	1.08
20080430000000	20080430	1000	35.72	-120.25	23.77	0.55	1.78
20080430000000	20080430	1019	35.58	-120.06	33.19	0.35	1.58
20080501000000	20080501	1001	35.65	-120.18	26.15	0.35	1.58
20080501000000	20080501	1411	35.59	-120.24	25.35	0.35	1.58
20080502000000	20080502	428	35.59	-120.14	24.49	0.32	1.55
20080502000000	20080502	1853	35.63	-120.35	18.37	0.32	1.55
20080502000000	20080502	1857	35.66	-120.29	16.66	0.03	1.26
20080503000000	20080503	2024	35.64	-120.25	21.47	0.32	1.55
20080504000000	20080504	421	35.64	-120.16	26.69	0.22	1.45
20080504000000	20080504	2200	35.62	-120.19	23.76	0.19	1.42
20080505000000	20080505	1828	35.65	-120.32	16.20	0.11	1.34

20080507000000	20080507	800	35.58	-120.23	13.72	0.14	1.37
20080509000000	20080509	26	35.60	-120.17	25.02	0.21	1.44
20080511000000	20080511	555	35.67	-120.24	19.67	0.34	1.57
20080512000000	20080512	800	35.62	-120.18	23.43	0.40	1.63
20080512000000	20080512	1258	35.71	-120.23	28.30	0.54	1.77
20080512000000	20080512	1614	35.70	-120.22	44.39	0.28	1.51
20080512000000	20080512	1947	35.72	-120.18	39.94	0.61	1.84
20080513000000	20080513	1832	35.65	-120.26	26.28	0.72	1.95
20080515000000	20080515	723	35.72	-120.28	20.10	0.19	1.42
20080517000000	20080517	1125	35.61	-120.26	16.91	0.00	1.23
20080517000000	20080517	1733	35.67	-120.22	29.14	0.23	1.46
20080518000000	20080518	1617	35.61	-120.23	30.36	0.06	1.29
20080521000000	20080521	1936	35.54	-120.14	41.14	0.59	1.82
20080521000000	20080521	1949	35.62	-120.36	51.67	0.32	1.55
20080523000000	20080523	112	35.70	-120.32	29.07	0.62	1.85
20080525000000	20080525	300	35.60	-119.80	10.31	0.34	1.57
20080525000000	20080525	1829	35.69	-120.28	23.82	0.15	1.38
20080528000000	20080528	1030	35.75	-120.22	22.82	0.17	1.40
20080528000000	20080528	1048	35.71	-120.23	17.92	-0.03	1.20
20080601000000	20080601	1556	35.61	-120.34	24.01	-0.03	1.20
20080606000000	20080606	640	35.68	-120.20	31.24	0.58	1.81
20080608000000	20080608	2143	35.67	-120.24	18.62	0.29	1.52
20080612000000	20080612	725	35.60	-120.15	24.19	0.18	1.41
20080613000000	20080613	38	35.64	-120.24	20.65	0.42	1.65
20080613000000	20080613	1435	35.61	-120.26	13.35	-0.04	1.19
20080613000000	20080613	2218	35.67	-120.23	35.21	0.45	1.68
20080613000000	20080613	2224	35.83	-120.22	15.96	-0.39	0.84
20080614000000	20080614	1446	35.61	-120.20	10.02	0.21	1.44
20080627000000	20080627	1244	35.75	-120.19	24.80	0.00	1.23
20080629000000	20080629	1545	35.76	-120.24	22.39	0.00	1.23
20080703000000	20080703	1646	35.64	-120.24	20.47	0.35	1.58
20080714000000	20080714	2103	35.63	-120.28	19.69	-0.33	0.90
20080716000000	20080716	404	35.68	-120.28	20.90	0.39	1.62

20080722000000	20080722	241	35.66	-120.27	15.14	0.53	1.76
20080802000000	20080802	701	35.67	-120.31	14.99	0.03	1.26
20080807000000	20080807	107	35.67	-120.28	22.12	0.40	1.63
20080814000000	20080814	2028	35.68	-119.83	40.34	0.54	1.77
20080819000000	20080819	220	35.68	-120.21	16.90	0.40	1.63
20080822000000	20080822	2015	35.71	-120.05	12.32	0.32	1.55
20080830000000	20080830	222	35.69	-120.23	14.69	-0.20	1.03
20080830000000	20080830	434	35.71	-120.24	14.74	-0.08	1.15
20080903000000	20080903	1838	35.60	-120.20	20.94	0.27	1.50
20080905000000	20080905	919	35.68	-120.26	22.16	0.47	1.70
20080906000000	20080906	2328	35.72	-120.22	17.18	-0.19	1.04
20080907000000	20080907	1224	35.69	-120.36	18.90	-0.02	1.21
20080907000000	20080907	1233	35.68	-120.33	23.29	0.02	1.25
20080908000000	20080908	839	35.70	-120.34	21.85	0.02	1.25
20080908000000	20080908	938	35.68	-120.29	16.89	0.07	1.30
20080908000000	20080908	1016	35.70	-120.32	22.53	0.18	1.41
20080908000000	20080908	1311	35.67	-120.28	21.90	0.07	1.30
20080908000000	20080908	1445	35.69	-120.36	19.40	-0.07	1.16
20080908000000	20080908	2144	35.63	-120.30	21.37	0.28	1.51
20080910000000	20080910	55	35.63	-120.31	18.39	0.26	1.49
20080910000000	20080910	950	35.63	-120.29	13.91	-0.07	1.16
20080910000000	20080910	1732	35.65	-120.27	18.75	0.06	1.29
20080912000000	20080912	51	35.75	-120.26	22.78	0.28	1.51
20080912000000	20080912	2202	35.69	-120.30	18.69	0.09	1.32
20080913000000	20080913	2334	35.67	-120.33	17.70	-0.05	1.18
20080915000000	20080915	127	35.62	-120.25	1.17	-0.17	1.06
20080915000000	20080915	312	35.67	-120.18	16.67	-0.09	1.14
20080915000000	20080915	326	35.74	-120.29	18.12	-0.11	1.12
20080915000000	20080915	1312	35.56	-120.11	28.56	0.50	1.73
20080917000000	20080917	932	35.65	-120.28	16.04	0.34	1.57
20080921000000	20080921	317	35.73	-120.21	29.47	0.29	1.52
20080923000000	20080923	701	35.71	-120.04	9.87	0.00	1.23
20080924000000	20080924	148	35.62	-120.15	32.19	0.76	1.99

20080924000000	20080924	2314	35.74	-120.21	16.16	0.07	1.30
20080928000000	20080928	1220	35.72	-120.13	26.80	0.53	1.76
20081001000000	20081001	1552	35.71	-120.25	21.16	0.08	1.31
20081008000000	20081008	1223	35.89	-120.18	9.13	-0.26	0.97
20081010000000	20081010	1221	35.58	-120.07	36.04	0.53	1.76
20081011000000	20081011	1525	35.71	-120.24	24.57	0.11	1.34
20081020000000	20081020	1441	35.66	-120.33	25.86	0.61	1.84
20081031000000	20081031	2352	35.71	-120.27	25.30	0.20	1.43
20081105000000	20081105	526	35.84	-120.03	39.99	0.52	1.75
20081110000000	20081110	1434	35.76	-119.95	21.10	0.36	1.59
20081117000000	20081117	1316	35.64	-120.15	23.33	0.00	1.23
20081126000000	20081126	1023	35.68	-120.33	13.64	0.12	1.35
20081126000000	20081126	1031	36.03	-120.24	42.97	0.36	1.59
20081126000000	20081126	1045	35.97	-120.23	44.24	0.01	1.24
20081129000000	20081129	1334	35.60	-120.12	21.54	0.22	1.45
20081203000000	20081203	1609	35.70	-120.22	29.14	0.43	1.66
20081209000000	20081209	122	35.68	-120.26	19.07	0.01	1.24
20081210000000	20081210	2330	35.62	-120.26	13.80	-0.08	1.15
20081217000000	20081217	1216	35.66	-120.28	14.90	0.17	1.40
20081217000000	20081217	1643	35.69	-120.28	22.97	0.10	1.33
20081217000000	20081217	1752	35.60	-120.23	24.02	0.26	1.49
20081218000000	20081218	247	35.72	-120.22	38.52	0.29	1.52
20081218000000	20081218	818	35.65	-120.34	24.19	0.01	1.24
20081218000000	20081218	1531	35.64	-120.25	39.94	0.56	1.79
20081218000000	20081218	1640	35.63	-120.32	20.26	0.22	1.45
20081219000000	20081219	531	35.70	-120.23	24.16	0.03	1.26
20081219000000	20081219	536	35.64	-120.22	23.02	0.25	1.48
20081219000000	20081219	1151	35.68	-120.32	16.54	0.19	1.42
20081219000000	20081219	2154	35.74	-120.08	32.39	0.24	1.47
20081220000000	20081220	501	35.58	-120.36	15.18	0.29	1.52
20081220000000	20081220	743	35.71	-120.32	21.41	-0.10	1.13
20081222000000	20081222	517	35.64	-120.26	18.19	0.30	1.53
20081223000000	20081223	1849	35.73	-120.21	26.58	0.15	1.38

20081227000000	20081227	1608	35.79	-120.03	12.06	0.41	1.64
20081229000000	20081229	1631	35.67	-120.29	13.96	-0.12	1.11
20081230000000	20081230	806	35.64	-120.18	20.11	0.00	1.23
20090101000000	20090101	1438	35.67	-120.23	17.26	0.39	1.62
20090105000000	20090105	638	35.76	-120.27	19.35	-0.15	1.08
20090105000000	20090105	643	35.62	-120.20	23.29	0.37	1.60
20090108000000	20090108	1310	35.71	-120.31	19.31	0.29	1.52
20090111000000	20090111	350	35.66	-120.25	20.16	0.27	1.50
20090116000000	20090116	2119	35.65	-120.26	19.03	0.26	1.49
20090120000000	20090120	522	35.73	-120.23	17.10	-0.06	1.17
20090124000000	20090124	58	35.67	-120.27	25.88	0.09	1.32
20090127000000	20090127	1038	35.71	-120.22	34.52	0.25	1.48
20090130000000	20090130	34	35.60	-120.24	14.62	0.16	1.39
20090131000000	20090131	136	35.65	-120.30	14.25	0.01	1.24
20090202000000	20090202	2307	35.67	-120.19	35.38	0.40	1.63
20090212000000	20090212	354	35.72	-120.16	22.77	-0.04	1.19
20090212000000	20090212	404	35.60	-120.21	22.33	0.01	1.24
20090219000000	20090219	509	35.71	-120.27	21.46	0.03	1.26
20090221000000	20090221	1256	35.69	-120.20	14.52	-0.32	0.91
20090223000000	20090223	315	35.77	-120.24	19.62	-0.24	0.99
20090223000000	20090223	1328	35.59	-120.12	37.13	0.45	1.68
20090224000000	20090224	1236	35.59	-120.11	21.81	0.15	1.38
20090226000000	20090226	1505	35.62	-120.22	21.17	0.23	1.46
20090227000000	20090227	1802	35.69	-120.28	22.36	0.30	1.53
20090301000000	20090301	933	35.61	-120.13	28.58	0.27	1.50
20090312000000	20090312	1907	35.69	-120.13	34.86	0.25	1.48
20090314000000	20090314	207	35.50	-120.04	38.01	0.53	1.76
20090326000000	20090326	1407	35.69	-120.23	22.66	0.24	1.47
20090409000000	20090409	909	35.71	-120.31	19.37	-0.02	1.21
20090413000000	20090413	307	35.67	-120.26	14.96	0.32	1.55
20090415000000	20090415	310	35.71	-120.33	25.67	-0.05	1.18
20090415000000	20090415	2204	35.63	-120.33	26.75	0.52	1.75
20090416000000	20090416	1329	35.67	-120.04	50.85	0.48	1.71

20090417000000	20090417	402	35.70	-120.26	20.64	0.10	1.33
20090417000000	20090417	918	35.63	-120.32	22.25	0.12	1.35
20090417000000	20090417	1052	35.69	-120.37	19.79	-0.32	0.91
20090417000000	20090417	1754	35.58	-120.14	25.37	0.35	1.58
20090418000000	20090418	819	35.77	-120.25	33.41	0.21	1.44
20090420000000	20090420	324	35.65	-120.25	12.39	0.35	1.58
20090423000000	20090423	1736	35.66	-120.28	14.16	-0.05	1.18
20090426000000	20090426	233	35.69	-120.30	23.76	0.44	1.67
20090430000000	20090430	20	35.66	-120.26	19.34	0.49	1.72
20090503000000	20090503	1247	35.71	-120.29	23.13	-0.13	1.10
20090505000000	20090505	229	35.77	-120.27	21.23	-0.25	0.98
20090506000000	20090506	248	35.62	-119.95	40.83	0.77	2.00
20090506000000	20090506	2010	35.67	-120.13	26.14	0.22	1.45
20090516000000	20090516	1951	35.74	-120.15	29.48	0.51	1.74
20090516000000	20090516	2004	35.62	-120.20	29.80	0.20	1.43
20090525000000	20090525	527	35.71	-120.30	20.58	-0.10	1.13
20090525000000	20090525	531	35.68	-120.31	21.81	0.04	1.27
20090527000000	20090527	212	35.72	-120.04	42.71	0.23	1.46
20090529000000	20090529	951	35.65	-120.21	20.26	0.19	1.42
20090601000000	20090601	1037	35.71	-120.21	27.23	-0.21	1.02
20090612000000	20090612	4	35.60	-120.36	16.56	-0.14	1.09
20090614000000	20090614	601	35.69	-120.29	19.13	0.00	1.23
20090614000000	20090614	609	35.67	-120.30	21.28	-0.08	1.15
20090614000000	20090614	748	35.64	-120.08	22.03	0.49	1.72
20090614000000	20090614	1021	35.66	-120.04	40.10	0.57	1.80
20090614000000	20090614	2242	35.65	-120.29	27.07	0.14	1.37
20090615000000	20090615	1552	35.62	-120.29	18.94	0.28	1.51
20090615000000	20090615	1641	35.69	-120.26	24.42	-0.11	1.12
20090615000000	20090615	1912	35.66	-120.29	25.78	0.22	1.45
20090616000000	20090616	613	35.68	-120.35	29.62	0.09	1.32
20090616000000	20090616	1003	35.70	-120.29	22.42	-0.20	1.03
20090616000000	20090616	1100	35.64	-120.31	36.31	0.01	1.24
20090616000000	20090616	1555	35.62	-120.58	36.88	-0.10	1.13

20090616000000	20090616	1600	35.63	-120.22	45.56	0.69	1.92
20090616000000	20090616	1940	35.79	-120.19	20.49	0.26	1.49
20090618000000	20090618	1227	35.62	-120.13	32.15	0.84	2.07
20090619000000	20090619	1429	35.65	-120.26	28.26	0.05	1.28
20090621000000	20090621	1911	35.65	-120.17	30.10	0.51	1.74
20090623000000	20090623	155	35.68	-120.33	19.02	0.11	1.34
20090625000000	20090625	418	35.65	-120.21	23.60	0.16	1.39
20090628000000	20090628	337	35.74	-120.20	20.21	0.08	1.31
20090703000000	20090703	1857	35.67	-120.07	40.11	0.88	2.11
20090713000000	20090713	2028	35.70	-120.23	25.34	0.46	1.69
20090716000000	20090716	44	35.75	-119.76	18.10	0.58	1.81
20090718000000	20090718	412	35.64	-120.17	22.02	0.35	1.58
20090718000000	20090718	2040	35.70	-120.29	19.61	0.08	1.31
20090721000000	20090721	105	35.63	-120.22	20.47	0.19	1.42
20090725000000	20090725	937	35.69	-120.22	19.77	0.02	1.25
20090727000000	20090727	1601	35.69	-120.12	31.51	0.48	1.71
20090727000000	20090727	1624	35.69	-120.16	27.58	0.11	1.34
20090801000000	20090801	1535	35.79	-120.20	48.85	0.69	1.92
20090802000000	20090802	2248	35.78	-120.16	15.88	-0.03	1.20
20090809000000	20090809	448	35.63	-120.27	25.67	0.43	1.66
20090810000000	20090810	1933	35.71	-120.32	24.03	-0.01	1.22
20090810000000	20090810	1946	35.68	-120.21	24.17	0.13	1.36
20090811000000	20090811	15	35.66	-120.31	27.55	0.02	1.25
20090811000000	20090811	1005	35.65	-120.33	21.72	0.27	1.50
20090812000000	20090812	945	35.64	-120.13	21.82	0.41	1.64
20090815000000	20090815	2307	35.74	-120.24	24.39	-0.03	1.20
20090820000000	20090820	2302	35.66	-120.23	18.68	0.49	1.72
20090824000000	20090824	321	35.71	-120.09	23.63	0.47	1.70
20090831000000	20090831	1420	35.61	-120.25	26.65	0.58	1.81
20090904000000	20090904	1409	35.71	-120.18	36.36	0.62	1.85
20090909000000	20090909	810	35.67	-120.23	25.77	0.11	1.34
20090909000000	20090909	1158	35.68	-120.17	11.28	-0.26	0.97
20090912000000	20090912	307	35.60	-120.23	19.97	-0.06	1.17

20090914000000	20090914	1253	35.71	-120.16	27.35	0.54	1.77
20090916000000	20090916	1409	35.62	-120.22	22.10	0.07	1.30
20090924000000	20090924	1507	35.68	-120.25	18.24	0.51	1.74
20090926000000	20090926	1215	35.56	-120.24	22.79	0.26	1.49
20090926000000	20090926	2037	35.67	-120.30	16.87	0.40	1.63
20090926000000	20090926	2200	35.69	-119.99	57.81	0.38	1.61
20090926000000	20090926	2303	35.62	-120.28	15.73	0.02	1.25
20090927000000	20090927	205	35.69	-120.14	14.60	0.11	1.34
20090927000000	20090927	229	35.70	-120.26	17.88	-0.09	1.14
20090927000000	20090927	718	35.65	-120.24	19.16	0.14	1.37
20090927000000	20090927	1036	35.64	-120.21	18.27	0.10	1.33
20090927000000	20090927	1047	35.71	-120.18	32.53	0.03	1.26
20090927000000	20090927	1055	35.66	-120.32	19.32	-0.05	1.18
20090927000000	20090927	1828	35.67	-120.23	29.72	-0.10	1.13
20090927000000	20090927	2301	35.61	-120.21	17.41	0.20	1.43
20090928000000	20090928	545	35.65	-120.30	20.85	0.23	1.46
20090928000000	20090928	1949	35.61	-120.16	25.82	0.47	1.70
20090928000000	20090928	1954	35.68	-120.28	20.34	0.12	1.35
20090928000000	20090928	2004	35.66	-120.21	24.28	0.00	1.23
20090929000000	20090929	1810	35.70	-120.24	25.00	0.64	1.87
20090930000000	20090930	1118	35.65	-120.21	22.81	0.03	1.26
20091002000000	20091002	2059	35.65	-120.26	18.09	0.54	1.77
20091004000000	20091004	2245	35.78	-120.03	18.41	0.54	1.77
20091006000000	20091006	1610	35.74	-120.16	27.75	0.28	1.51
20091008000000	20091008	1032	35.62	-120.08	24.32	-0.03	1.20
20091010000000	20091010	1319	35.68	-120.29	21.32	0.38	1.61
20091013000000	20091013	1153	35.67	-120.19	24.10	0.43	1.66
20091015000000	20091015	2305	35.58	-120.25	16.74	0.19	1.42
20091016000000	20091016	25	35.59	-120.33	23.40	0.13	1.36
20091021000000	20091021	1348	35.68	-120.17	31.16	0.29	1.52
20091021000000	20091021	1353	35.68	-120.31	33.04	-0.19	1.04
20091024000000	20091024	1716	35.69	-120.04	28.17	0.86	2.09
20091028000000	20091028	1104	35.68	-120.29	15.03	0.40	1.63

20091101000000	20091101	1821	35.78	-120.21	35.24	0.25	1.48
20091101000000	20091101	2312	35.67	-120.32	32.19	-0.02	1.21
20091102000000	20091102	311	35.62	-120.25	14.24	0.14	1.37
20091102000000	20091102	703	35.66	-120.33	21.18	0.06	1.29
20091102000000	20091102	909	35.68	-120.31	22.31	0.20	1.43
20091102000000	20091102	914	35.74	-120.15	37.19	0.25	1.48
20091102000000	20091102	1133	35.69	-120.33	18.79	-0.07	1.16
20091102000000	20091102	2045	35.65	-120.31	20.01	0.26	1.49
20091103000000	20091103	238	35.68	-120.29	26.98	-0.02	1.21
20091105000000	20091105	1553	35.67	-120.28	22.64	0.43	1.66
20091106000000	20091106	1204	35.71	-120.24	26.69	-0.06	1.17
20091108000000	20091108	616	35.69	-120.20	24.05	0.18	1.41
20091112000000	20091112	1959	35.62	-120.22	35.29	0.61	1.84
20091118000000	20091118	1214	35.69	-120.25	23.87	0.43	1.66
20091124000000	20091124	1440	35.62	-120.36	31.90	0.38	1.61
20091130000000	20091130	2246	35.65	-120.21	24.76	0.30	1.53
20091130000000	20091130	2258	35.66	-120.36	19.16	-0.20	1.03
20091205000000	20091205	1511	35.72	-120.23	25.35	0.20	1.43
20091216000000	20091216	943	35.61	-120.21	23.83	0.61	1.84
20091224000000	20091224	306	35.73	-120.28	19.56	-0.10	1.13
20091228000000	20091228	527	35.65	-120.12	29.70	0.24	1.47
20100101000000	20100101	1512	35.72	-120.29	13.35	-0.32	0.91
20100104000000	20100104	731	35.69	-120.23	21.16	-0.11	1.12
20100104000000	20100104	1342	35.64	-120.26	25.04	-0.04	1.19
20100109000000	20100109	2025	35.61	-120.22	20.58	-0.17	1.06
20100111000000	20100111	330	35.63	-120.26	15.71	0.47	1.70
20100111000000	20100111	342	35.67	-120.31	20.58	0.28	1.51
20100111000000	20100111	1906	35.64	-120.17	28.08	0.49	1.72
20100111000000	20100111	2133	35.68	-120.27	25.58	0.05	1.28
20100112000000	20100112	253	35.66	-120.28	16.70	-0.05	1.18
20100112000000	20100112	749	35.62	-120.28	22.95	0.24	1.47
20100112000000	20100112	1130	35.74	-120.25	27.74	-0.18	1.05
20100112000000	20100112	1806	35.72	-120.26	28.75	0.27	1.50

20100113000000	20100113	48	35.61	-120.09	39.51	0.29	1.52
20100114000000	20100114	658	35.62	-120.28	17.35	0.24	1.47
20100119000000	20100119	1056	35.52	-120.19	35.76	0.63	1.86
20100124000000	20100124	2247	35.69	-120.34	15.48	0.01	1.24
20100517000000	20100517	2010	35.67	-120.20	20.34	0.00	1.23
20100629000000	20100629	1156	35.66	-120.31	22.45	0.29	1.52
20100629000000	20100629	1208	35.58	-120.20	21.19	0.23	1.46
20100703000000	20100703	1542	35.62	-120.31	15.31	0.14	1.37
20100704000000	20100704	2011	35.68	-120.29	17.28	0.23	1.46
20100705000000	20100705	2144	35.46	-120.16	34.75	1.01	2.24
20100707000000	20100707	1037	35.62	-120.28	20.07	0.04	1.27
20100710000000	20100710	1643	35.67	-120.28	10.18	-0.02	1.21
20100714000000	20100714	119	35.63	-120.30	15.85	0.22	1.45
20100714000000	20100714	127	35.70	-120.30	10.36	-0.24	0.99
20100717000000	20100717	2117	35.59	-120.04	34.03	0.41	1.64
20100722000000	20100722	337	35.59	-120.27	26.22	0.20	1.43
20100724000000	20100724	549	35.67	-120.28	18.74	0.00	1.23
20100729000000	20100729	1035	35.68	-120.31	17.80	0.25	1.48
20100804000000	20100804	1032	35.69	-120.24	22.03	0.39	1.62
20100812000000	20100812	224	35.68	-120.24	23.65	0.53	1.76
20100817000000	20100817	1429	35.58	-120.21	36.20	0.64	1.87
20100817000000	20100817	1441	35.51	-120.15	41.48	0.37	1.60
20100824000000	20100824	2127	35.56	-120.21	36.62	0.30	1.53
20100825000000	20100825	303	35.69	-120.29	13.99	0.20	1.43
20100829000000	20100829	132	35.70	-120.24	11.31	0.12	1.35
20100830000000	20100830	144	35.57	-120.09	28.48	0.31	1.54
20100902000000	20100902	1022	35.69	-120.25	20.52	0.15	1.38
20100902000000	20100902	1102	35.64	-120.14	29.80	0.17	1.40
20100903000000	20100903	110	35.63	-120.34	27.40	0.08	1.31
20100903000000	20100903	617	35.69	-120.31	19.13	-0.11	1.12
20100903000000	20100903	840	35.69	-120.36	21.95	0.10	1.33
20100903000000	20100903	848	35.66	-120.26	18.36	-0.19	1.04
20100903000000	20100903	1139	35.66	-120.29	21.63	-0.06	1.17

20100903000000	20100903	1223	35.65	-120.32	19.72	0.07	1.30
20100904000000	20100904	101	35.67	-120.29	19.66	-0.07	1.16
20100904000000	20100904	1215	35.64	-120.29	22.90	0.46	1.69
20100904000000	20100904	1555	35.61	-120.21	21.37	0.21	1.44
20100904000000	20100904	1910	35.67	-120.22	33.60	0.50	1.73
20100906000000	20100906	1448	35.67	-120.32	21.35	0.02	1.25
20100906000000	20100906	1534	35.62	-120.44	19.03	-0.20	1.03
20100910000000	20100910	225	35.58	-120.24	29.73	0.54	1.77
20100912000000	20100912	1313	35.64	-120.35	16.86	0.07	1.30
20100915000000	20100915	1343	35.68	-120.21	25.26	0.35	1.58
20100916000000	20100916	845	35.57	-120.18	23.94	0.19	1.42
20100917000000	20100917	2127	35.69	-120.29	24.60	-0.09	1.14
20100921000000	20100921	816	35.61	-120.27	12.19	0.05	1.28
20100922000000	20100922	18	35.67	-120.32	9.78	0.19	1.42
20100925000000	20100925	1403	35.66	-120.23	24.07	-0.18	1.05
20101005000000	20101005	459	35.64	-120.23	16.88	0.39	1.62
20101015000000	20101015	1349	35.61	-120.01	23.66	0.72	1.95
20101020000000	20101020	646	35.59	-120.24	25.11	0.38	1.61
20101026000000	20101026	1209	35.68	-120.24	20.76	0.41	1.64
20101028000000	20101028	832	35.73	-120.34	21.82	-0.20	1.03
20101028000000	20101028	837	35.65	-120.20	23.31	0.17	1.40
20101028000000	20101028	916	35.58	-120.24	19.83	0.06	1.29
20101029000000	20101029	2339	35.71	-120.22	24.22	-0.11	1.12
20101102000000	20101102	519	35.63	-120.18	22.57	0.12	1.35
20101102000000	20101102	1228	35.68	-120.26	18.33	0.33	1.56
20101107000000	20101107	244	35.56	-120.08	36.14	0.34	1.57
20101108000000	20101108	1849	35.82	-120.16	14.10	-0.12	1.11
20101117000000	20101117	1049	35.65	-120.27	22.27	0.47	1.70
20101119000000	20101119	1127	35.60	-120.21	19.83	0.06	1.29
20101123000000	20101123	438	35.67	-120.26	26.90	0.19	1.42
20101123000000	20101123	446	35.66	-120.24	18.47	0.25	1.48
20101125000000	20101125	1551	35.68	-120.24	27.93	-0.14	1.09
20101201000000	20101201	1321	35.71	-120.27	18.50	0.26	1.49

20101204000000	20101204	1740	35.75	-120.20	15.42	-0.13	1.10
20101214000000	20101214	1212	35.69	-120.31	17.00	0.09	1.32
20101220000000	20101220	1255	35.63	-120.20	29.94	0.50	1.73
20101221000000	20101221	636	35.65	-120.30	14.79	0.15	1.38
20101226000000	20101226	2046	35.75	-120.19	27.19	0.46	1.69
20101226000000	20101226	2055	35.62	-120.22	28.00	0.20	1.43
20101226000000	20101226	2059	35.59	-120.18	32.86	0.19	1.42
20101228000000	20101228	1331	35.74	-120.32	12.78	0.09	1.32
20101229000000	20101229	104	35.67	-120.32	18.32	-0.16	1.07
20101229000000	20101229	227	35.65	-120.33	21.14	0.23	1.46
20101229000000	20101229	452	35.69	-120.26	23.23	0.22	1.45
20101229000000	20101229	612	35.62	-120.23	15.35	0.08	1.31
20101230000000	20101230	22	35.56	-120.46	14.23	0.16	1.39
20101231000000	20101231	947	35.65	-120.26	18.75	0.16	1.39
20110101000000	20110101	936	35.63	-120.24	21.37	0.22	1.45
20110104000000	20110104	3	35.66	-120.05	23.12	0.23	1.46
20110104000000	20110104	12	35.60	-120.27	30.76	0.44	1.67
20110107000000	20110107	701	35.67	-120.30	14.69	-0.07	1.16
20110109000000	20110109	836	35.65	-120.34	22.69	0.27	1.50
20110120000000	20110120	1747	35.61	-120.34	11.27	0.00	1.23
20110123000000	20110123	14	35.57	-120.26	21.03	0.05	1.28
20110123000000	20110123	1934	35.66	-120.33	21.34	0.17	1.40
20110126000000	20110126	1632	35.64	-120.30	24.46	-0.05	1.18
20110127000000	20110127	1518	35.51	-120.06	39.48	0.45	1.68
20110129000000	20110129	1041	35.68	-120.26	19.03	-0.10	1.13
20110130000000	20110130	1139	35.71	-120.31	24.39	-0.11	1.12
20110130000000	20110130	1941	35.73	-120.29	19.46	-0.20	1.03
20110131000000	20110131	42	35.67	-120.32	22.65	0.23	1.46
20110131000000	20110131	205	35.65	-120.32	31.85	0.42	1.65
20110131000000	20110131	648	35.70	-120.27	37.14	0.26	1.49
20110131000000	20110131	1005	35.64	-120.28	18.71	-0.07	1.16
20110131000000	20110131	1015	35.67	-120.30	28.76	0.40	1.63
20110131000000	20110131	2346	35.67	-120.29	21.53	0.20	1.43

20110201000000	20110201	131	35.66	-120.31	19.42	0.18	1.41
20110201000000	20110201	338	35.66	-120.29	21.55	0.28	1.51
20110202000000	20110202	151	35.67	-120.25	24.61	0.24	1.47
20110203000000	20110203	411	35.68	-120.32	31.64	0.32	1.55
20110207000000	20110207	336	35.67	-120.28	25.82	-0.03	1.20
20110209000000	20110209	905	35.72	-120.31	32.49	0.18	1.41
20110211000000	20110211	1856	35.65	-120.29	20.98	0.29	1.52
20110216000000	20110216	1118	35.74	-120.18	30.21	0.65	1.88
20110219000000	20110219	1935	35.68	-120.25	22.02	0.18	1.41
20110228000000	20110228	1351	35.68	-120.29	18.17	-0.04	1.19
20110305000000	20110305	728	35.64	-120.22	22.63	0.31	1.54
20110309000000	20110309	811	35.65	-120.29	20.94	0.42	1.65
20110314000000	20110314	1718	35.65	-120.21	26.23	-0.08	1.15
20110329000000	20110329	757	35.72	-120.25	20.50	0.33	1.56
20110404000000	20110404	2106	35.65	-120.37	16.69	0.02	1.25
20110404000000	20110404	2116	35.64	-120.30	17.36	-0.15	1.08
20110430000000	20110430	639	35.60	-120.23	27.63	0.12	1.35
20110503000000	20110503	1109	35.69	-120.27	13.58	-0.16	1.07
20110504000000	20110504	1417	35.51	-120.40	5.05	0.10	1.33
20110505000000	20110505	1929	35.69	-120.32	25.04	0.17	1.40
20110510000000	20110510	2140	35.60	-120.21	25.52	0.37	1.60
20110510000000	20110510	2151	35.64	-120.27	23.20	0.37	1.60
20110511000000	20110511	1738	35.70	-120.28	25.15	0.11	1.34
20110512000000	20110512	1239	35.69	-120.36	17.48	-0.04	1.19
20110512000000	20110512	2112	35.66	-120.33	22.40	-0.08	1.15
20110513000000	20110513	213	35.61	-120.29	16.25	0.39	1.62
20110513000000	20110513	952	35.60	-120.26	18.66	0.07	1.30
20110513000000	20110513	1652	35.60	-120.24	19.92	0.07	1.30
20110513000000	20110513	2301	35.63	-120.26	28.10	0.44	1.67
20110514000000	20110514	901	35.65	-120.19	23.05	-0.07	1.16
20110514000000	20110514	1433	35.69	-120.22	30.43	0.01	1.24
20110514000000	20110514	1728	35.62	-120.30	20.36	0.15	1.38
20110516000000	20110516	1310	35.66	-120.31	23.38	0.20	1.43

20110522000000	20110522	312	35.63	-120.26	12.91	0.02	1.25
20110522000000	20110522	1837	35.67	-120.28	13.75	0.02	1.25
20110525000000	20110525	24	35.65	-120.31	24.51	0.22	1.45
20110528000000	20110528	132	35.71	-120.30	22.10	-0.30	0.93
20110530000000	20110530	2328	35.57	-120.23	21.36	0.08	1.31
20110531000000	20110531	1523	35.65	-120.28	23.83	0.13	1.36
20110605000000	20110605	1855	35.67	-120.28	19.54	0.15	1.38
20110611000000	20110611	441	35.69	-120.31	20.03	0.04	1.27
20110616000000	20110616	38	35.67	-120.25	23.70	0.41	1.64
20110620000000	20110620	330	35.68	-120.28	23.98	0.12	1.35
20110621000000	20110621	2028	35.76	-120.33	11.62	-0.61	0.62
20110621000000	20110621	2038	35.79	-120.43	13.41	-0.79	0.44
20110626000000	20110626	411	35.57	-120.20	22.01	0.39	1.62
20110630000000	20110630	1647	35.67	-120.28	17.70	0.06	1.29
20110630000000	20110630	1657	35.65	-120.26	17.96	-0.06	1.17
20110704000000	20110704	409	35.72	-120.26	18.80	-0.26	0.97
20110704000000	20110704	420	35.60	-120.20	21.21	0.17	1.40
20110710000000	20110710	819	35.62	-120.17	30.27	0.06	1.29
20110710000000	20110710	826	35.66	-120.25	25.47	-0.09	1.14
20110710000000	20110710	1417	35.65	-120.27	23.03	-0.10	1.13
20110716000000	20110716	1737	35.72	-120.21	24.41	0.01	1.24
20110717000000	20110717	1532	35.69	-120.19	23.32	-0.13	1.10
20110717000000	20110717	1536	35.69	-120.24	20.88	-0.11	1.12
20110723000000	20110723	849	35.63	-120.23	15.07	-0.13	1.10
20110723000000	20110723	1021	35.67	-120.30	16.84	-0.16	1.07
20110730000000	20110730	2149	35.66	-120.23	24.00	0.02	1.25
20110731000000	20110731	1134	35.62	-120.25	15.38	-0.06	1.17
20110731000000	20110731	1139	35.66	-120.29	15.77	0.04	1.27
20110731000000	20110731	1150	35.74	-120.24	27.43	-0.05	1.18
20110731000000	20110731	1159	35.72	-120.31	21.10	-0.35	0.88
20110803000000	20110803	737	35.70	-120.30	18.15	0.06	1.29
20110806000000	20110806	1852	35.65	-120.21	23.15	-0.19	1.04
20110811000000	20110811	149	35.69	-120.13	27.35	0.04	1.27

20110811000000	20110811	204	35.65	-120.33	18.31	-0.10	1.13
20110811000000	20110811	2305	35.72	-120.29	19.09	0.17	1.40
20110813000000	20110813	423	35.61	-120.24	23.33	-0.04	1.19
20110813000000	20110813	1218	35.60	-120.19	24.59	0.07	1.30
20110814000000	20110814	1113	35.69	-120.28	21.74	-0.28	0.95
20110814000000	20110814	1117	35.67	-120.28	15.68	-0.18	1.05
20110814000000	20110814	1529	35.69	-120.28	25.66	-0.05	1.18
20110814000000	20110814	1704	35.68	-120.29	22.30	0.14	1.37
20110814000000	20110814	2031	35.71	-120.25	23.45	-0.10	1.13
20110814000000	20110814	2200	35.70	-120.34	19.05	-0.05	1.18
20110814000000	20110814	2315	35.69	-120.31	20.97	-0.17	1.06
20110815000000	20110815	157	35.67	-120.31	20.76	0.24	1.47
20110815000000	20110815	621	35.71	-120.31	22.12	-0.11	1.12
20110815000000	20110815	913	35.71	-120.38	21.09	-0.27	0.96
20110815000000	20110815	933	35.71	-120.27	19.78	0.04	1.27
20110815000000	20110815	1709	35.72	-120.23	19.56	0.21	1.44
20110816000000	20110816	1110	35.68	-120.33	16.22	0.09	1.32
20110817000000	20110817	534	35.69	-120.31	26.01	-0.02	1.21
20110818000000	20110818	1043	35.69	-120.29	15.20	0.24	1.47
20110819000000	20110819	1025	35.70	-120.29	26.50	0.12	1.35
20110820000000	20110820	319	35.74	-120.31	15.62	-0.40	0.83
20110820000000	20110820	2232	35.76	-120.19	20.29	0.10	1.33
20110822000000	20110822	1848	35.67	-120.15	21.54	0.10	1.33
20110822000000	20110822	1856	35.77	-120.27	19.75	-0.14	1.09
20110823000000	20110823	1139	35.68	-120.32	21.52	-0.07	1.16
20110823000000	20110823	1646	35.79	-120.25	31.52	0.08	1.31
20110824000000	20110824	1026	35.72	-120.33	19.01	-0.41	0.82
20110824000000	20110824	1737	35.64	-120.26	16.30	-0.23	1.00
20110824000000	20110824	1741	35.62	-120.28	28.26	0.02	1.25
20110830000000	20110830	711	35.62	-120.15	27.26	-0.22	1.01
20110902000000	20110902	650	35.71	-120.27	19.38	-0.04	1.19
20110902000000	20110902	658	35.70	-120.22	19.50	-0.10	1.13
20110905000000	20110905	1203	35.68	-120.26	22.51	-0.08	1.15

20110906000000	20110906	1041	35.68	-120.27	16.48	0.03	1.26
20110910000000	20110910	1014	35.70	-120.32	9.90	0.05	1.28
20110914000000	20110914	433	35.63	-120.30	22.86	0.30	1.53
20110918000000	20110918	2126	35.71	-120.26	20.89	-0.08	1.15
20110919000000	20110919	1430	35.72	-120.07	25.81	-0.02	1.21
20110924000000	20110924	942	35.64	-120.25	20.68	-0.23	1.00
20110927000000	20110927	1611	35.77	-120.20	19.43	-0.08	1.15
20110929000000	20110929	610	35.65	-120.25	16.16	0.14	1.37
20111001000000	20111001	912	35.70	-120.29	19.25	-0.09	1.14
20111004000000	20111004	1241	35.74	-120.22	20.77	-0.09	1.14
20111010000000	20111010	932	35.69	-120.29	18.00	0.22	1.45
20111012000000	20111012	1547	35.67	-119.97	32.63	0.25	1.48
20111013000000	20111013	1505	35.74	-120.16	29.45	-0.08	1.15
20111013000000	20111013	1510	35.76	-120.13	25.11	-0.20	1.03
20111019000000	20111019	1209	35.65	-120.35	20.11	-0.15	1.08
20111024000000	20111024	1609	35.71	-120.29	17.23	-0.04	1.19
20111029000000	20111029	646	35.69	-120.31	14.95	0.14	1.37
20111103000000	20111103	2356	35.62	-120.25	32.50	0.14	1.37
20111104000000	20111104	0	35.65	-120.30	26.14	0.23	1.46
20111104000000	20111104	12	35.60	-120.15	25.61	0.12	1.35
20111112000000	20111112	1251	35.67	-120.29	14.67	-0.13	1.10
20111115000000	20111115	1455	35.74	-120.12	18.62	-0.07	1.16
20111122000000	20111122	842	35.69	-120.15	45.63	0.20	1.43
20111122000000	20111122	850	35.67	-120.28	18.88	-0.10	1.13
20111126000000	20111126	832	35.67	-120.29	30.74	0.26	1.49
20111127000000	20111127	1540	35.44	-120.29	19.81	0.25	1.48
20111128000000	20111128	441	35.65	-120.16	25.73	-0.03	1.20
20111128000000	20111128	1722	35.62	-120.22	26.54	0.15	1.38
20111129000000	20111129	225	35.66	-120.21	33.75	0.03	1.26
20111129000000	20111129	915	35.69	-120.30	20.29	-0.11	1.12
20111130000000	20111130	704	35.59	-120.25	19.72	-0.04	1.19
20111130000000	20111130	1505	35.71	-120.29	22.33	-0.08	1.15
20111201000000	20111201	657	35.54	-120.31	30.04	0.00	1.23

20111202000000	20111202	1736	35.68	-120.09	27.83	0.20	1.43
20111202000000	20111202	2118	35.69	-120.23	33.21	0.21	1.44
20111206000000	20111206	751	35.68	-120.26	16.52	0.12	1.35
20111208000000	20111208	836	35.64	-120.29	26.84	0.12	1.35
20111208000000	20111208	1109	35.67	-120.33	22.47	-0.07	1.16
20111208000000	20111208	1509	35.74	-120.25	21.05	-0.09	1.14
20111208000000	20111208	2240	35.45	-120.43	11.92	-0.02	1.21
20111210000000	20111210	1337	35.68	-120.29	18.75	0.03	1.26
20111214000000	20111214	2247	35.67	-120.24	15.85	0.16	1.39
20111218000000	20111218	1807	35.69	-120.25	21.95	-0.14	1.09
20111222000000	20111222	1020	35.66	-120.28	17.43	-0.10	1.13
20120103000000	20120103	547	35.69	-120.31	22.62	0.02	1.25
20120105000000	20120105	139	35.67	-120.13	39.85	0.18	1.41
20120105000000	20120105	1119	35.68	-120.28	20.82	0.15	1.38
20120106000000	20120106	1052	35.66	-120.29	18.19	-0.16	1.07
20120110000000	20120110	158	35.76	-120.17	24.11	-0.10	1.13
20120110000000	20120110	202	35.68	-120.30	22.77	-0.26	0.97
20120113000000	20120113	1947	35.65	-120.29	16.87	0.03	1.26
20120113000000	20120113	1958	35.63	-120.23	17.53	-0.06	1.17
20120119000000	20120119	1046	35.66	-120.26	22.02	0.41	1.64
20120127000000	20120127	1229	35.71	-120.31	13.56	-0.21	1.02
20120205000000	20120205	1709	35.74	-120.24	22.30	-0.15	1.08
20120207000000	20120207	402	35.68	-120.32	22.01	-0.21	1.02
20120208000000	20120208	1351	35.72	-120.29	21.18	-0.22	1.01
20120209000000	20120209	227	35.74	-120.12	36.70	0.39	1.62
20120209000000	20120209	1655	35.66	-120.18	37.09	0.55	1.78
20120210000000	20120210	755	35.74	-120.21	20.16	-0.15	1.08
20120211000000	20120211	0	35.59	-120.32	20.60	0.01	1.24
20120211000000	20120211	1133	35.67	-120.29	17.40	-0.03	1.20
20120211000000	20120211	1810	35.76	-120.04	29.42	0.13	1.36
20120212000000	20120212	443	35.60	-120.14	32.86	0.56	1.79
20120212000000	20120212	744	35.65	-120.26	15.43	0.39	1.62
20120214000000	20120214	404	35.81	-120.16	23.20	-0.05	1.18

20120221000000	20120221	1248	35.72	-120.26	28.38	0.06	1.29
20120225000000	20120225	827	35.68	-120.23	21.10	-0.17	1.06
20120304000000	20120304	1025	35.70	-120.26	19.28	-0.41	0.82
20120307000000	20120307	637	35.69	-120.23	18.87	-0.03	1.20
20120313000000	20120313	413	35.66	-120.24	23.20	0.25	1.48
20120320000000	20120320	1816	35.50	-120.17	13.95	0.82	2.05
20120329000000	20120329	2030	35.65	-120.22	33.85	0.17	1.40
20120406000000	20120406	2128	35.63	-120.27	30.72	0.42	1.65
20120415000000	20120415	1330	35.72	-120.31	16.73	-0.29	0.94
20120415000000	20120415	1340	35.64	-120.21	24.24	0.10	1.33
20120420000000	20120420	53	35.72	-120.31	11.87	-0.32	0.91
20120426000000	20120426	1434	35.76	-120.21	19.56	-0.30	0.93
20120426000000	20120426	1501	35.71	-120.25	22.67	-0.11	1.12
20120510000000	20120510	2204	35.73	-120.23	20.55	0.25	1.48
20120513000000	20120513	2022	35.75	-120.27	13.51	-0.44	0.79
20120513000000	20120513	2031	35.68	-120.22	21.51	-0.07	1.16
20120517000000	20120517	1734	35.72	-120.29	13.81	-0.43	0.80
20120521000000	20120521	607	35.73	-120.24	25.11	0.04	1.27
20120521000000	20120521	1020	35.68	-120.30	19.16	-0.01	1.22
20120522000000	20120522	135	35.66	-120.11	28.24	0.65	1.88
20120523000000	20120523	1819	35.66	-120.15	39.94	0.44	1.67
20120524000000	20120524	1934	35.78	-120.24	15.26	-0.10	1.13
20120529000000	20120529	2101	35.67	-120.23	21.17	-0.03	1.20
20120601000000	20120601	1639	35.71	-120.23	23.08	0.29	1.52
20120602000000	20120602	2241	35.70	-120.15	19.66	0.07	1.30
20120606000000	20120606	1737	35.74	-120.24	22.46	0.18	1.41
20120606000000	20120606	1742	35.72	-120.29	18.74	-0.06	1.17
20120613000000	20120613	28	35.62	-120.24	24.66	0.52	1.75
20120616000000	20120616	339	35.63	-120.17	39.94	0.41	1.64
20120616000000	20120616	944	35.70	-120.31	25.95	-0.02	1.21
20120616000000	20120616	1225	35.74	-120.27	26.50	0.07	1.30
20120617000000	20120617	1016	35.67	-120.29	23.56	-0.12	1.11
20120617000000	20120617	2127	35.65	-120.31	17.19	0.19	1.42

20120619000000	20120619	338	35.73	-120.33	21.86	-0.05	1.18
20120621000000	20120621	1512	35.69	-120.30	20.70	0.19	1.42
20120627000000	20120627	2225	35.66	-120.25	31.14	0.09	1.32
20120702000000	20120702	1412	35.70	-120.32	25.63	0.33	1.56
20120705000000	20120705	702	35.70	-120.33	16.47	-0.09	1.14
20120710000000	20120710	826	35.65	-120.27	21.43	0.23	1.46
20120715000000	20120715	2016	35.61	-120.31	15.48	0.10	1.33
20120718000000	20120718	30	35.73	-120.25	23.53	0.23	1.46
20120723000000	20120723	230	35.63	-120.23	20.72	-0.06	1.17
20120724000000	20120724	255	35.63	-120.22	22.59	0.12	1.35
20120727000000	20120727	1824	35.72	-120.33	20.14	-0.03	1.20
20120802000000	20120802	1941	35.69	-120.31	23.36	0.03	1.26
20120803000000	20120803	247	35.68	-120.32	21.63	0.24	1.47
20120803000000	20120803	1323	35.67	-120.29	20.36	0.21	1.44
20120803000000	20120803	1514	35.62	-120.23	21.91	0.11	1.34
20120804000000	20120804	2058	35.61	-120.30	21.93	0.04	1.27
20120805000000	20120805	1950	35.62	-120.23	18.73	0.50	1.73
20120808000000	20120808	1046	35.67	-120.27	16.61	0.18	1.41
20120810000000	20120810	2347	35.65	-120.28	19.51	0.29	1.52
20120812000000	20120812	1556	35.61	-120.20	39.94	0.24	1.47
20120814000000	20120814	1141	35.64	-120.28	17.90	-0.12	1.11
20120817000000	20120817	1727	35.63	-120.20	30.35	0.11	1.34
20120823000000	20120823	1913	35.70	-120.19	26.59	0.45	1.68
20120828000000	20120828	1559	35.71	-120.24	24.19	0.18	1.41
20120904000000	20120904	1124	35.69	-120.23	22.36	0.41	1.64
20120908000000	20120908	834	35.70	-120.28	29.21	-0.21	1.02
20120918000000	20120918	158	35.69	-120.28	16.57	0.00	1.23
20120921000000	20120921	1112	35.66	-120.23	25.38	0.35	1.58
20120921000000	20120921	1132	35.68	-120.25	33.10	0.38	1.61
20120924000000	20120924	1253	35.68	-120.31	17.10	-0.21	1.02
20120926000000	20120926	1107	35.68	-120.21	21.03	0.00	1.23
20121003000000	20121003	645	35.72	-120.29	21.92	-0.19	1.04
20121009000000	20121009	1300	35.67	-120.25	23.00	0.39	1.62

20121013000000	20121013	1721	35.70	-120.24	25.98	-0.17	1.06
20121015000000	20121015	1652	35.69	-120.18	25.74	0.11	1.34
20121020000000	20121020	536	35.75	-120.24	24.86	-0.22	1.01
20121026000000	20121026	105	35.69	-120.04	40.01	0.45	1.68
20121028000000	20121028	323	35.70	-120.22	29.14	0.32	1.55
20121028000000	20121028	2317	35.62	-120.21	23.05	0.07	1.30
20121104000000	20121104	1902	35.64	-120.37	21.05	-0.24	0.99
20121104000000	20121104	1907	35.66	-120.32	22.04	0.14	1.37
20121108000000	20121108	2348	35.68	-120.13	29.27	0.13	1.36
20121119000000	20121119	924	35.68	-120.29	18.87	0.19	1.42
20121124000000	20121124	1124	35.73	-120.26	21.08	-0.12	1.11
20121130000000	20121130	1627	35.69	-120.07	35.02	0.59	1.82
20121209000000	20121209	851	35.66	-120.23	24.44	0.18	1.41
20121209000000	20121209	855	35.63	-120.32	23.60	0.10	1.33
20121220000000	20121220	430	35.73	-120.19	26.62	0.49	1.72
20121231000000	20121231	122	35.74	-120.19	28.88	0.59	1.82
20130105000000	20130105	530	35.67	-120.29	24.97	0.38	1.61
20130113000000	20130113	2238	35.67	-120.27	25.94	0.55	1.78
20130113000000	20130113	2256	35.69	-120.33	28.76	-0.16	1.07
20130114000000	20130114	56	35.62	-120.26	36.36	0.31	1.54
20130114000000	20130114	1121	35.64	-120.27	29.66	0.21	1.44
20130114000000	20130114	1233	35.69	-120.27	24.91	0.06	1.29
20130114000000	20130114	1403	35.71	-120.27	26.45	-0.01	1.22
20130114000000	20130114	1655	35.74	-120.25	27.36	0.30	1.53
20130114000000	20130114	2103	35.70	-120.26	26.83	0.01	1.24
20130114000000	20130114	2251	35.86	-119.88	0.78	0.01	1.24
20130115000000	20130115	106	35.72	-120.25	30.31	-0.16	1.07
20130115000000	20130115	149	35.75	-120.18	18.08	-0.11	1.12
20130115000000	20130115	701	35.67	-120.29	21.10	0.12	1.35
20130115000000	20130115	1750	35.65	-120.24	22.22	0.38	1.61
20130116000000	20130116	1544	35.69	-120.34	22.75	0.26	1.49
20130116000000	20130116	1813	35.69	-120.31	27.53	0.13	1.36
20130117000000	20130117	830	35.69	-120.31	24.80	0.28	1.51

20130118000000	20130118	2356	35.91	-120.10	32.86	0.00	1.23
20130119000000	20130119	0	35.66	-120.27	28.15	0.47	1.70
20130120000000	20130120	517	35.69	-120.33	17.59	0.06	1.29
20130121000000	20130121	1459	35.63	-120.08	29.86	0.23	1.46
20130123000000	20130123	102	35.70	-120.27	24.24	-0.30	0.93
20130124000000	20130124	13	35.60	-120.18	25.11	0.09	1.32
20130124000000	20130124	1333	35.71	-120.29	33.81	0.28	1.51
20130126000000	20130126	1342	35.73	-120.22	22.02	0.11	1.34
20130126000000	20130126	1349	35.66	-120.24	21.29	0.10	1.33
20130202000000	20130202	722	35.65	-120.31	17.12	0.15	1.38
20130205000000	20130205	2100	35.64	-120.24	33.66	0.47	1.70
20130208000000	20130208	348	35.68	-120.26	22.33	0.20	1.43
20130213000000	20130213	1238	35.62	-120.24	20.40	0.24	1.47
20130215000000	20130215	1600	35.74	-120.27	23.22	-0.17	1.06
20130219000000	20130219	1550	35.65	-120.29	20.01	0.30	1.53
20130219000000	20130219	1925	35.67	-120.29	27.64	0.03	1.26
20130219000000	20130219	2213	35.70	-120.28	16.41	-0.21	1.02
20130220000000	20130220	2303	35.67	-120.30	28.06	0.41	1.64
20130221000000	20130221	843	35.66	-120.28	18.65	0.10	1.33
20130221000000	20130221	2210	35.85	-120.22	21.85	-0.27	0.96
20130223000000	20130223	447	35.64	-120.27	22.53	0.18	1.41
20130301000000	20130301	12	35.67	-120.24	25.14	0.14	1.37
20130303000000	20130303	2251	35.64	-120.33	17.49	-0.07	1.16
20130304000000	20130304	930	35.58	-120.15	30.10	0.30	1.53
20130308000000	20130308	2100	35.69	-120.25	21.47	0.21	1.44
20130314000000	20130314	1627	35.68	-120.34	15.37	0.19	1.42
20130327000000	20130327	328	35.62	-120.29	19.49	0.01	1.24
20130327000000	20130327	332	35.63	-120.29	25.23	0.10	1.33
20130401000000	20130401	1922	35.64	-120.37	20.33	-0.08	1.15
20130424000000	20130424	847	35.65	-120.21	26.78	0.24	1.47
20130507000000	20130507	2258	35.59	-120.26	14.65	-0.16	1.07
20130511000000	20130511	2316	35.63	-120.25	23.72	0.26	1.49
20130514000000	20130514	2027	35.68	-120.31	19.42	-0.04	1.19

20130515000000	20130515	1415	35.69	-120.33	22.65	0.02	1.25
20130516000000	20130516	1410	35.67	-120.29	24.52	0.25	1.48
20130523000000	20130523	1210	35.71	-120.27	25.86	0.30	1.53
20130523000000	20130523	1310	35.66	-120.29	27.88	0.15	1.38
20130523000000	20130523	1559	35.72	-120.09	38.68	0.45	1.68
20130524000000	20130524	48	35.72	-120.16	35.12	0.54	1.77
20130530000000	20130530	1946	35.70	-120.19	33.96	0.23	1.46
20130607000000	20130607	546	35.69	-120.28	16.93	0.17	1.40
20130609000000	20130609	2243	35.62	-120.30	20.31	0.30	1.53
20130614000000	20130614	2026	35.69	-120.19	20.99	0.14	1.37
20130623000000	20130623	255	35.74	-120.31	18.72	-0.23	1.00
20130628000000	20130628	1137	35.68	-120.23	18.95	0.14	1.37
20130628000000	20130628	2310	35.62	-120.29	25.35	0.20	1.43
20130629000000	20130629	437	35.71	-120.29	17.53	-0.05	1.18
20130629000000	20130629	537	35.60	-120.13	22.67	0.04	1.27
20130629000000	20130629	954	35.64	-120.29	23.16	0.21	1.44
20130629000000	20130629	1745	35.65	-120.31	23.44	0.16	1.39
20130630000000	20130630	1952	35.66	-120.30	22.28	0.29	1.52
20130704000000	20130704	816	35.67	-120.25	20.87	0.03	1.26
20130710000000	20130710	644	35.59	-120.18	29.22	0.18	1.41
20130712000000	20130712	2000	35.69	-120.30	20.50	0.04	1.27
20130720000000	20130720	1555	35.65	-120.25	21.65	0.51	1.74
20130727000000	20130727	146	35.63	-120.32	23.47	0.24	1.47
20130803000000	20130803	1530	35.68	-120.20	26.23	0.41	1.64
20130809000000	20130809	319	35.64	-120.21	20.50	0.10	1.33
20130809000000	20130809	1718	35.67	-120.27	22.76	-0.07	1.16
20130809000000	20130809	1723	35.62	-120.32	11.54	-0.11	1.12
20130814000000	20130814	1804	35.69	-120.28	22.67	-0.11	1.12
20130815000000	20130815	617	35.60	-120.23	16.29	0.17	1.40
20130831000000	20130831	333	35.67	-120.23	31.27	0.51	1.74
20130904000000	20130904	2213	35.65	-120.20	21.58	0.34	1.57
20130909000000	20130909	1530	35.72	-120.24	19.91	0.18	1.41
20130913000000	20130913	1328	35.71	-120.28	14.86	0.17	1.40

20130917000000	20130917	352	35.70	-120.31	26.26	0.03	1.26
20130923000000	20130923	744	35.63	-120.29	23.08	0.36	1.59
20130926000000	20130926	1915	35.72	-120.23	23.79	0.06	1.29
20130930000000	20130930	1146	35.65	-120.15	33.83	0.10	1.33
20131004000000	20131004	1213	35.65	-120.22	21.40	-0.20	1.03
20131007000000	20131007	2217	35.65	-120.35	20.33	0.46	1.69
20131008000000	20131008	52	35.67	-120.30	28.49	0.00	1.23
20131008000000	20131008	348	35.67	-120.28	20.15	0.10	1.33
20131008000000	20131008	927	35.71	-120.28	21.27	-0.06	1.17
20131009000000	20131009	417	35.66	-120.24	26.72	0.40	1.63
20131009000000	20131009	1028	35.69	-120.28	18.91	0.06	1.29
20131009000000	20131009	1851	35.66	-120.32	22.10	0.12	1.35
20131010000000	20131010	545	35.65	-120.27	21.37	0.39	1.62
20131015000000	20131015	1310	35.57	-120.19	27.76	0.10	1.33
20131019000000	20131019	1223	35.67	-120.26	24.58	0.43	1.66
20131021000000	20131021	1028	35.68	-120.30	18.26	-0.03	1.20
20131031000000	20131031	1058	35.68	-120.30	25.51	-0.01	1.22
20131031000000	20131031	1102	35.66	-120.15	28.60	0.30	1.53
20131104000000	20131104	815	35.70	-120.24	28.59	0.04	1.27
20131122000000	20131122	1034	35.72	-120.23	26.67	0.07	1.30
20131126000000	20131126	2318	35.62	-120.16	25.20	-0.09	1.14
20131128000000	20131128	952	35.59	-120.13	38.62	0.19	1.42
20131129000000	20131129	524	35.68	-120.29	24.20	-0.13	1.10
20131205000000	20131205	431	35.67	-120.33	27.15	0.07	1.30
20131208000000	20131208	817	35.57	-120.14	27.70	0.26	1.49
20131208000000	20131208	1644	35.75	-120.26	21.20	-0.09	1.14
20131222000000	20131222	521	35.69	-120.25	20.81	-0.03	1.20
20131222000000	20131222	532	35.61	-120.18	20.81	0.11	1.34
20140111000000	20140111	342	35.69	-120.32	14.69	-0.03	1.20
20140115000000	20140115	1406	35.72	-120.31	15.01	-0.10	1.13
20140117000000	20140117	600	35.63	-120.25	19.64	0.06	1.29
20140117000000	20140117	1420	35.68	-120.33	27.58	-0.02	1.21
20140118000000	20140118	323	35.68	-120.28	25.11	0.20	1.43

20140118000000	20140118	1339	35.69	-120.31	17.73	0.18	1.41
20140119000000	20140119	220	35.64	-120.29	12.93	-0.11	1.12
20140119000000	20140119	1039	35.67	-120.31	18.12	-0.22	1.01
20140120000000	20140120	403	35.62	-120.30	17.38	-0.09	1.14
20140121000000	20140121	446	35.61	-120.22	21.62	0.04	1.27
20140122000000	20140122	454	35.58	-120.27	20.75	0.02	1.25
20140123000000	20140123	402	35.67	-120.20	25.95	0.25	1.48
20140125000000	20140125	728	35.61	-120.24	21.21	0.03	1.26
20140125000000	20140125	733	35.72	-120.22	27.65	-0.09	1.14
20140129000000	20140129	358	35.68	-120.24	20.83	0.28	1.51
20140131000000	20140131	1200	35.72	-120.29	22.28	-0.13	1.10
20140203000000	20140203	2140	35.69	-120.29	29.11	0.22	1.45
20140208000000	20140208	752	35.70	-120.28	19.48	0.33	1.56
20140214000000	20140214	358	35.70	-120.27	19.19	0.27	1.50
20140217000000	20140217	1405	35.68	-120.29	24.27	0.06	1.29
20140220000000	20140220	2342	35.69	-120.28	21.76	-0.20	1.03
20140221000000	20140221	2038	35.62	-120.33	24.14	0.18	1.41