

Mineralogy and melt inclusion constrains on pre-eruption crystallization history of dacites of the Lvinaya Past caldera eruptions (Iturup Island, Kuril Island arc)

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³P qxqukdkt umUcvg'Wpksxt ukv{. 'P qxqukdkt um'T wuuk "

⁴XUQUdqdrx'Kpukswg'qh'I gqrqi { 'cpf 'O kpgtcrqi { 'UD'TCU.'P qxqukdkt um'T wuuk "

Vj g'Mwtkn/Mco ej cvnc'kurcpf/cte'u' u'vgo . 'y j lej 'ur cpu'htqo 'vj g'Mco ej cvnc'r gpkpuwr'vq'vj g'kurcpf'qh' J qmnekf q'ku'cp'ctgc'qh'o qf gtp'cevkg'xqrecpluo O'Qp'vj g'kurcpf u'qh'vj g'I tgcv'Mwtkn' tki g'vj g'ku'c'y kf g' ur gevwo 'qh'xqrecple'tqemu'htqo 'dcucnu'vq'tj { qrkgu'Vj g'o quv'eqo o qp'tqemu'ctg'cpf guksu'U'g'nikle'xqrecple' tqemu'ctg'tgr t'gugpvf'vq'c'ngugt'f gi tgg'vj cp'dcucnle'cpf 'cpf guksle'xqrecple'tqemu.'cpf 'vj gkt'r tqr qt vqp' kpetgcugu'uqwj y ctf O'P gxtvj g'guu.'vj g'uklele'tqemu'qh'vj g'Mwtkn'Kurcpf u'ctg'r qqrn'npqy p'cpf 'ctg'qh'i tgcv' ko r qtcpeg'ht'v'p'f gtuvcpf kpi 'vj g'gxqnw'k'p'qh'kurcpf/cte'o ci o cvkuo 'cpf 'vj g'htqo cvkqp'qh'vj g'eqpv'kpgv'cnlet wuv' qh'vj g' { qwpi 'kurcpf'cteuO'

Ecrf gtc'qh'vj g'Nxlpc { c'Rcuw'Dc { *NR+ku'htecv'f'kp'vj g'ugwj gtp'r ctv'qh'Kwtw'Kurcpf O'Vj g'pqt y j g'ugvtp' r ctv'qh'vj g'ecrf gtc'xcpkij gf 'cpf 'ku'etevgt'pqy 'ku'htngf 'y kj 'vj g'Qnj qum'Ugc'y cvgtu'Vj g'o czko wo 'f lco gvt' qh'vj g'ecrf gtc'ku'; 'no O'vj g'f gr vj 'qh'vj g'ecrf gtc'ecxk'ku'3'no O'Vj g'ecrf gtc'j cu'cp'grik'v'ecnlj cr g'y kj 'vj g'rupi' czku'qt'kpgv'f'kp'c'uwdo g'kf k'p'cn'f'k'ge'v'k'p'f'k'ht'g'p'v'g'uko cvkpu'i kxg'vj g'xqno g'qh'gtw'v'f' o cvgt'cn'htqo '42' vq'322'no *F gi vgt'gx'g'v'cn'4236=T'gegpv'cpf 'O qf gtp'Xqrecpluo . '4227+O'Vj g'y cmu'qh'vj g'ecrf gtc'ctg' eqo r qugf 'qh'ixc'cpf 'r { tqeruc' o cvgt'cn'Nqo v'x. '422: +O'Vj g'ecrf gtc.'uk' g'ku'eqo r ctdc'v'v'vj g'ecrf gtc'qh' Mwtkn'ug'Ncng. 'y j lej 'ku'q'p'g'qh'vj g'o quv' qy g'htw'g'zr' m'uk'x'g'v'w'v'k'p'vj g'J qm'egp'q'p'Mco ej cvnc'Rgpkpuwr' *Dc| cpqxc'g'v'cn'4238+O'

R { tqeruc' f gr quku. 'r tqf v'egf 'd { 'vj g'ugt'ku'qh'Rik'p'k'p'ecrf gtc'htqo kpi 'gtw'v'k'p'vj cv'q'eev'v'g'f'cv'vj g' gpf 'qh'R'g'k'v'egp'g'cpf 'dgi k'p'kpi 'qh'J qm'egp'g. 'ctg'eqo r qugf 'qh'f'cek'le'w'ht'y kj 'cdw'p'f'cp'v'f'cek'le'r wo leg' enw'v'gtu'V'v'ht'x' { gtu'ng'q'x'g'vj g'eqpi m'qo g'cv'gu'O'c'ucn'v'ht'x' { gtu'eqp'v'k'p'cdw'p'f'cp'v't'gu'v'i'gp'v'o cvgt'cn'cpf' d'qo u.'u'qo g'qh'y j lej 'j' c'x'g'q'rk'k'p'g'r'nci k'qerug'd'c'ucn'eqo r quk'k'p'u'

NR'r wo legu'd'g'm'pi 'v'q'r g'c'nc'wo k'p'q'u'ht'y /r q'v'cu'k'wo 'f'cek'gu'qh'p'q'to c'n'c'm'k'p'k'f'. 'y j lej 'ctg'y' k'f'g'ur' t'g'c'f' kp'vj g'kurcpf'cteu'cpf 'ctg'ulo k'rc't'v'q'v'p'c'rk'g'v'p'q'f' l'go k'g'ugt'ku'V'j g' { 'eqp'v'k'p'cd'q'w'32/37'x'q'no 'r'j' g'p'q'et' { u'u'v' htqo 'v'q'v'nt'q'cn'x'q'no g.'y j lej 'ctg'lo o g'ug'f'kp'j { c'rk'p'g'uk'le'g'q'u' *U'Q4'95/98'y v'o +i' t'q'w'p'f' o' cu'u'y' k'j' 'c' h'k'd't'q'u'v' ut'w'v'wt'g'O'Vj g'r'j' g'p'q'et' { u'u'v'ctg't'g'r't'g'ug'p'v'f' d' { 'r'nci k'qerug.'s'w'ct'v'. 'c'w' k'g' *Y qm'2065/2066.'O i' %205/206+. 'j { r'gt'uj' g'p'g' *O i' %2084/2086+. 'O i' /j' q't'p'd'r'p'f' g'co r'j' k'd'q'ng'cpf 'H'g/V'k'z'k'f' g'u'o'

Vj g'c'ko 'qh'vj k'u'uw'f' { 'ku'v'q'eqp'v'k'p'et' { u'v'cn'k' cvkqp'eqp'f' k'k'p'u'kp'vj g'Nxlpc { c'Rcuw'o ci o cv'le't'g'ug'x'q'k' r' t'k'q't'v'v'rc'ti' g'ue'c'g'g'tw'v'k'p'd' { 'r'nci k'qerug'i' t'q'y' vj 'l' q'p'k'pi 'cpf 'o' g'n'k'p'en'w'k'p'u'w'f' { O'

R'nci k'qerug'w'uw'c'm'f' h'q'to u'y' g'm'uj' cr' g'f' 't'c'p'ur' c't'g'p'v'et' { u'v'cn'y' k'j' 'cdw'p'f'cp'v'o' k'p'g't'c'n'c'p'f' 'o' g'n'k'p'en'w'k'p'u'v' R'nci k'qerug'f' q'o' k'p'cv'gu' vj g'r'j' g'p'q'et' { u'v'cu'go' d'nci' g' 'cpf' 'eqo' r' t'k'ug'u' o' q't'g' vj' cp' '72/82' "qh'c'm'f' r'j' g'p'q'et' { u'u'v' E'qo' r' quk'k'p'u'qh'r'j' g'p'q'et' { u'u'v'x'ct' { 'ht'qo' 'cpf' g'ul'p'g'v'q'v'nc'd'c'f' q't' *C'p62: 7+'y' k'j' 'M'Q'eqp'v'g'p'u'f' q'p'q'v'g'z'eg'g'f' k'pi' 2089'y v'o' O'

Nxlpc { c'Rcuw'r'nci k'qerug'u'f' go' q'p'v'c'v'g'c'eqo' r' ng'z' i' t'q'y' vj 'l' q'p'k'pi' O'Vj g' { 'j' c'x'g'c'r' c'v'ej' { 'cpf' 'eq'p'eg'p'v'le' v'g'z'w't'g'u.'y j lej 'ctg'eqo o qp'ht' r'nci k'qerugu'htqo 'c'y' k'f'g'x'ct'k'g'v' { 'qh'x'q'rec'ple' 't'q'emu' *M'cy' co' q'v'. '3; ; 4= U'ej' g't'd'c'n'x'g'v'v'cn'4233+O'R'ev'ej' { 'r'nci k'qerug'eqp'uk'w'qh'f' q'o' c'k'p'u'qh'eqp'v'c'v'eqo' r' quk'k'p'u'y' k'j' 'C'p9; /C'p: 7" cpf 'C'p62/C'p77O'Vj' w'u'v'j' g'i' cr' 'qh'42/52'cp'q't'v' k'g'p'wo' d'g't'u'ku'c'ny' c' { u'r' t'g'ug'p'v'd'g'w' g'g'p'f' q'o' c'k'p'eqo' r' quk'k'p'u'v'

E'qo' r' quk'k'p'u'v' qh' vj g'eq'p'eg'p'v'le' r'nci k'qerug' i' t'c'f' w'c'm'f' 'ej' c'p'i' g'u' q'w'y' c't'f' u' htqo 'C'p: 7" vq' C'p63O' R'nci k'qerugu'ec'p'j' c'x'g'g'k'j' g't' r' c'v'j' e'j' { 'q't'eq'p'eg'p'v'le'v'g'z'w't'g'g' d'w'v'k'i' p'h'k'ec'p'v'p'wo' d'g't'qh'r'j' g'p'q'et' { u'u'v'j' c'x'g'r' c'v'j' { 'v'g'z'w't'g'g'k'p'vj g'eq't'g'cpf' 'eq'p'eg'p'v'le'g'z'v'g't'p'c'n'r' c't'u'O'P'q'v'c'n'f'. 'vj' g'j' k'j' g'u'v'Ec'eq'p'v'g'p'u'kp'vj g'r'nci k'qerug'ct'g' eq'p'h'k'p'g'f'v'q'vj g'd'q'w'p'f' c't' { 'u'g'r' c't'c'v'k'pi' vj g'r' c'v'ej' { 'eq't'g'cpf' 'eq'p'eg'p'v'le'g'z'v'g't'p'c'n'r' c't'u'O'

E't' { u'v'cn'k' cvkqp'v'nc't'u'y' k'j' 'r'nci k'qerug.'v'y' q'r' { t'q'z'g'p'g.'o' ci' p'g'v'k'g'cpf' 'k'o' g'p'k'g'cu'go' d'nci' g'O'Co' r'j' k'd'q'ng' l'q'k'p'u'v'j' k'u'r' t'q'eg'u'u'c'v'k'p'v'g'to' g'f' k'c'v'g'v'nci' g'u.'y j' g'p'Ec'eq'p'v'g'p'u'kp'r'nci k'qerug'ct'g'j' k'j' g'u'v'c'p'f' 'ku'ht'q'm'y' g'f' d' { 's'w'ct'v'. 'y j lej 'r' t'q'd'c'd'n'f' 'ku'v'j' g'v'c'v'v'et' { u'v'cn'k' k'pi' 'o' k'p'g't'c'n'f'

I'ncu'u'eqo' r' quk'k'p'u'qh'p'c'w't'c'm'f' 's'w'g'p'ej' g'f' 'o' g'n'k'p'en'w'k'p'u'kp'c'n'it'j' g'p'q'et' { u'v'o' k'p'g't'c'n'ku'eqo' r' quk'k'p'c'm'f' 'ulo' k'rc't'v'q'vj g'i' t'q'w'p'f' o' cu'u'i'ncu'u'cpf' 'eq't't'g'ur' q'p'f' u'v'q'ht'y' /M'o' g'v'v'q'r' g't'c'nc'wo' k'p'q'u'v'tj' { q'rk'g'u'v' r'nci' k'q'tj' { q'rk'g'u'+ *U'Q4''96/97'y v'o . 'P'c4'Q'507/604'y v'o . 'M'Q'308/4'y v'o +y' k'j' 'j' k'j' 'E'nc'eq'p'v'g'p'v'204/206'y v'o' +y' c'v'g't'eq'p'v'g'p'u.'y j lej 'x'ct' { 'y' k'j' k'p'507''60' y v'o' *d' { 'U'K'U'v'o'

RV'eq'p'f' k'k'p'u'qh'et' { u'v'cn'k' cvkqp'y' g't'g'g'uko' c'v'g'f' d' { 'o' k'p'g't'c'n'v'j' g'to' q'd'c't'q'o' g't' { 'cpf' 'o' g'n'k'p'en'w'k'p'u'v' vj' g'to' q'o' g't' { O'R'nci' k'qerug'v'k'w'f' *R'w'k't'nc.'4227.'Y' c'v'g't'u'g'v'cn'4237+'cpf' 'y' q'r' { t'q'z'g'p'g' i' g'q'v'j' g'to' q'o' g'v'g't'u' *R'w'k't'nc.'422: +y' g't'g'w'ug'f' O'E'qo' r' quk'k'p'u'qh'o' g'n'k'p'en'w'k'p'u'c'p'f' 'k'p'en'w'k'p'u'v'j' qu'k'p'i' 'r'nci' k'qerug'v'j' q'p'g'y' g't'g'c'ng'p' h'q't'ec'r'ew'r'v'k'p'u'O'R'nci' k'qerug'v'k'w'f' 'v'go' r' g't'c'w't'g'u'c'v'3/4'nc'd'c't'c'p'f' '6'y' v'o' 'J'4'Q'ct'g': '65''/: '8: AE.'c'v'7'y' v'o' 'J'4'Q'

Kpukswg'qh'Xqrecpqrqi { 'cpf' 'U'g'kuo' q'qi { 'HGD'TCU.'R'g'v'q'r' c'x'rk'x'um'Mco' ej' c'v'um'f' . 'T'w'uk.'42y/48y' 'C'w'v'w'v'423: "

"

/: 47/: 67Æ"cpf "cv8'y x0" : 22/: 45Æ0Vy q/r {tqzpgg'vgo r gtcwtgu'cv'j gug'r tguwtgu'y gtg'gunko cvgf "cv": 67/ : 82Æ."y j lej "ci tgguy gmi'y kj "vj g'f c'c'qdvkpgf "Itqo "vj g'r mi kqercug/riks wkf "i gqj gto qo gvt0

Et {ucnk' cvkqp"r tguwtgu'y gtg"eqputckpgf "wulpi "co r j kdqrg."co r j kdqrg/r mi kqercug"cpf "co r j kdqrg/ r mi kqercug/riks wkf "i gqdtqo gvtu'd { "J qmpf .Dnwpf { "3; ; 2."3; ; 6+."J gr "3; 95+."Qwgp "3; ; 6+."J co o ctuqto . " \ gp "3; ; 8+."J qmkugt "3; ; 9+."O qrkpc "4237+."cpf "Rwktnc "4238+."Cm'dctqo gvtu'i cxg"eqo r ctedng"tguwmu" dgy ggp"304"cpf "404"ndctu0I gqj gto qo gvt { "qh'co r j kdqrg/dgetkpi "cuugo dmi gu'd { "Rwktnc "4238+."cpf "O qrkpc "4237+."i cxg"gu'ko cvkqpu"cdqmw": 22062Æ."y j lej "uc'kucvqt { "eqkpkf gu'r mi kqercug/riks wkf "cpf "y q/r {tqzpgg" i gqj gto qo gvtu0

Vj g"o clqtks' "qh' vj g" s wctv /j quvgf "o gm' kpenwukapu" j qo qi gpk g" cv": 72/: 92Æ" cpf " vj ku" kp" i qqf " ci tggg gp'v0 kpgtcni gqj gto qo gvt { "gu'ko cvgu0"

Tgrcvkxgn { "ny "RV"eqpf kkpau"307/407"ndct"cpf": 72/; 22Æ+."urki j v'xctkcvkqpu'lp'vj g'b gm'eqo r qukqpu" cmipi "y kj "eqo r r'z'et {ucnk' cvkqp"j kvt { "lwi i gu'vj cvNRT'cekle'b ci o c'ku'c'tguwv'qh'lj cmqy 'b gnkpi "qh'gctn' " gtr vgf "xqrcple'tqemu'qh'dcuke"qt'kpvgo gf k'v'eqo r qukqpu."eqpvk'kpi "co r j kdqrg"qt'qy gt'j {f tqwu'b kpgtcn. " cu" k' y cu" uj qy p" d { "ny /r tguwtg" *5ndct+ "g'zr gtko gpw" qp" f gj {f cvkqp" r ct'ken" o gnkpi " o gwcdcuksu" *cpf gukdcucnu+d { "Dgctf .Nqhi tgp."3; ; 3+0"

Wpwwcn'vz wctn'ej cpi gu'kp'r mi kqercug'i tqy vj "l qkpi 'lpf k'cvgu'vj cv'j g'gctn' {r mi kqercug" *Cp62/77+." y j lej "cuuqekcvgf "y kj "j r gtuj gpg."cwi kg."cpf "Hg"cpf "VK'qz'kf gu."y cu'uwdukw'gf "d { "Ec/tlej "qpg'et {ucnk' kpi " y kj "co r j kdqrg"0Vj ku'eqwf "gxf gpeg"ht'k'p'etgcug"kp'r tguwtg."cuuqekcvgf "y kj "k'p'etgcug"qh'J 4Q"eqpv'gw"qh' o ci o c0Rt'g'ek'k'cvkqp"qh'co r j kdqrg."y j lej "ku'Ec/tlej "j {f tqwu'b kpgtcn "f getgcugf "vj g'r tguwtg"cpf "tguwngf "kp" i tcf wcn'f getgcug"qh'Ec/eqpv'gw"kp'r mi kqercug0Et {ucnk' cvkqp"ugs w'peg"eq'k'p'k'f gu'y gmi'y kj "g'zr gtko gpw"qp" et {ucnk' cvkqp"qh'O v0U0J grgp"xqrcp'q'tj {qf cekgu'cv": 7Æ " *T'kengt "gv'cn0"4237+0

Qw'tguwmu'lj qy "vj cv'f'cekle'b ci o c'qh'vj g'ecvutqr j k' "Rrg'k'v'q'egpg/J qm'egpg"gtw v'k'p'u'qh'vj g'N'k'p'c {c" Rcu'ecnf gtc"y cu"c"o k'zw'tg"qh'tj {q'rk'le"o gm'y kj "t'g'uk'le"o k'p'g'tcni" *r {tqzpgg"cpf "r mi kqercug+"cpf "pgy n' " et {ucnk' gf "r mi kqercug."co r j kdqrg"cpf "s wctv "cuugo dmi g0

"

Tghgtgpegu"

"

Dc| cpqxc"NK"O grnguegx "KX."R'p'q'p' ctgxc"XX."F k'mugp"QX."F k'mugp"XI ."Xqrcple"ecvutqr j gu'qh'vj g'N'cv'g" Rrg'k'v'q'egpg/J qm'egpg"kp"Mc'o ej cvne"cpf "vj g"Mt'ki'K'rc'p'f u0'R'ctv'K0V {r gu"cpf "ercuugu"qh'ecvutqr j k' " gtr v'k'p'u'vj g'o c'k'p'eqo r q'p'gw"qh'xqrcp'q'ni k'ec'n'ecvutqr j ku' " *kp" T'w'uk'p+"I"4238."Xqrcp'q'ni { "cpf " ugkuo q'ni { ."xqr05."r 05/430'

Dgctf ."L0'U0"Nqhi tgp" I 0'G0" F gj {f cvkqp" o gnkpi "cpf "y cvgt/ucwtcvgf "o gnkpi "qh' dcucnle" cpf "cpf guk'le" i tggpuv'q'p'cpf "co r j kdqrg"cv306"cpf "8Q "I'l'q'w't'p'cn'qh'R'g't'q'ni { ."3; ; 3."X04."Ku04."r 0587/6230'

F gi vgtgx"CX."T {d'lp"CX."C'tur'p'q'x" Mj (C0gve0E'c'f' g'tq/h'q'to kpi "gtw v'k'p'qh'N'k'p'u'0 q'w'j "K'w'tw" K'rc'p'f ."M'w't'ki' K'rc'p'f u+"ut'cv'ki t'c'r j { "cpf "ci g" *kp" T'w'uk'p+" I"R't'q'eg'g'f kpi u'qh'vj g"X'K'U'k'd'g't'k'c'p"U'ek'p'w'k'le"cpf "R't'c'v'ec'n' E'q'p'h'g't'g'p'eg'q'h' q'w'pi "U'ek'p'k'u'u'q'p" G'c't'y "U'ek'p'eg'u042360P q'x'q'k'd'k'un0K k0 "U'D'T'CU'vj go 0X'U0U'q'd'q'ngx." /"VU"36/370'

J co o ctutqo ."L00 0" \ gp" G0" C'no k'p'wo "kp" j q't'p'd'ng'p'f g'<"cp" go r k'le'cn'ki p'g'q'wu" i gqdtqo gvt "I" Co g't'k'c'p" O k'p'g't'c'ni ku."3; ; 8."xqr093."r 034; 9/35350'

J gr .T0V0'Rj cug't'g'v'k'p'u'qh'd'cucnu'lp'vj g'k't'o gnkpi "t'c'p'i g'cv'RJ 4Q"? "7'mi'cu'c'hw'p'v'k'p'qh'q'z {i gp'hw' c'ek'f 0' R'ctv'K0O c'k'e"r j cugu"l'l'q'w't'p'cn'qh'R'g't'q'ni { ."3; 95."xqr036."r 046; /5240'

J qmpf ."V0" Dnwpf { ."L0" P q'p'k'f g'cn' k'p'v'g't'c'v'k'p'u" kp" e'c'r'le" co r j kdqrgu" cpf " vj g'k't" d'g'et'k'p'i "qp" co r j kdqrg/ r mi kqercug"vj gto qo gvt { "I" E'q'p't'k'd'w'k'p'u'v'q" O k'p'g't'c'ni { "cpf "R'g't'q'ni { ."3; ; 6"xqr0338."r 0655/6690'

J qmkugt."N00" I thuuqo ."I 0E0" R'g'v'tu."G0M0" U'q'y gm" J 0 0" U'ku'q'p."X0D0" E'q'p'h'k'o cvkqp"qh'vj g" go r k'le'cn' e'q't't'g'v'k'p'qh' C'n'k'p" j q't'p'd'ng'p'f g"y kj "r t'g'u'wtg" qh' u'q'k'f k'k'ec'v'k'p' qh' e'c'r'e/c'm'ek'p'g"r n'w'q'p'u" I" Co g't'k'c'p" O k'p'g't'c'ni ku."3; ; 9."xqr094."r 0453/45; 0'

Mcy co qvq."V0" F wuv { "cpf "j q'p'g {eqo d'r mi kqercug"o'lpf k'ec'v'q'tu"qh'r t'q'eg'u'gu"kp"vj g" W'ej k'p'q'ut'c'v'k'k'f "o ci o c" ej co dgt."K'w'R'g'p'k'u'w'c."L'c'r'c'p"l'l'q'w't'p'cn'qh'Xqrcp'q'ni { "cpf "I gqj gto cn'T'gug't'ej ."3; ; 4."X06; ."Ku05/6." r 03; 3/42: 0'

"

"

Mqvqx"CC0"Uo ktpqx"U0 0"O cmiko qxlej "KC0"Rnej qx"RQ w0"Ej gt vnxc"P X0"Dghwa"COY cvgt"lp"o gm' kpenwukpu'htqp'r j gpqet { uuv'qh'f cekg'r wo leg'qh'Xgtqxq { "Kvj o wu"*Kwt wr "Krcpf o "Uqwj gtp'Mwtkgu+"I' IOP conference Series: Earth and Environmental Science, 42390X0320'

Nqo vgx"XN.'Gzvtwukpu'qh'yj g'luqwj gtp'Qnj qumqwwunk'w'qh'yj g'Mwtkn'cte'pgct'yj g'ecrf gtc'Nxlpc { c'Recuo'*Kwt wr " Krcpf +*lp'Twukcp+'I'422: . 'I gqmi k'c'KTc| xgf ne '*uj qt v'eqo o wplecvkpu+'xqr06. 'r 094/960'

O cmiko qxlej "KC0"Uo ktpqx"U0 0"Mqvqx"CC0"Vlo kpc"VQ w0"Uj gxnq"CQ 0"O ci o c"uvtci g'eqputckpu'd { " eqo r qukkapcn| qpkpi "qh'r mi kqercug'htqo 'f cekgu'qh'yj g'ecrf gtc'htqo kpi "gtw v'kpu'qh'Xgtqxq { "Kvj o wu" cpf "Nxlpc { c'Recuo'Dc { '*Kwt wr "Krcpf . 'Mwtkg'Krcpf u+'I'IOP conference Series: Earth and Environmental Science, 42390X0320'

O qrkpc.'LHD'O qtgpq.'LCO'Ecutq.'C0'Tqf t'f wgl . 'E0'Hgtuj cvgt.'I O0'Ecreke'co r j kdqrg'yj gto qdctqo gvt { "lp" o gvo qtr j le'cpf 'ki pgqu'iqemu'P gy 'ecrkdctv'kpu'dcugf "qp'r mi kqercug'co r j kdqrg'Cr'UKr ct v'kqpkpi "cpf " co r j kdqrg'iks wlf "O i 'r ct v'kqpkpi "I'Nkj qu."4237.'xqr0454.'r 04: 8/5270'

Qwgp.'O O0'Vj g'qtki lp'qh'dtqy p'j qtpdrgpf g'lp'yj g'Ctvl@ngv'i cddtq'cpf 'f qrgtkgu'I'Eqpvtkd00 kpgtcn0Rgvtqr0" 3; : 6.'xqr0: 8.'r 03: ; /3; ; 0'

Rwktne.'MOC0'Kpgqu'v'j gto qo gyvtu'cpf "dctqo gyvtu'dcugf "qp'r mi kqercug'r nu'iks wlf 'gs wkrkdtk'Vguu'qh'luqo g" gzlkupi "o qf gu'cpf "pgy "ecrkdctv'kpu'I'Co gtlecp'O kpgtcni kuv."4227.'XQ 2.'Ku04/5.'r 0558/5680'

Rwktne.'M0'Vj gto qo gyvtu'cpf "dctqo gyvtu'ht'xqrecple'u'uygo u00 kpgtcni.'kpenwukpu'cpf "Xqrecple'Rtqeguugu" I'Tgxlg'y u'lp'O kpgtcni { "('I gqej go kut { ."422: . 'xqr08; . 'r 083/3420'

Rwktne.'M0'Co r j kdqrg'yj gto qo gyvtu'cpf "dctqo gyvtu'ht'ki pgqu'u'uygo u'cpf "uqo g'ko r rlec'kpu'ht'gtw v'kpu" o gej cpluo u'qh'hnke"o ci o cu'cv'cte"xqrecpqu'I'Co gtlecp'O kpgtcni kuv."4238.'xqr0323.'r 0: 63/: 7: 0'

Vj g'pgy guv'cpf "o qf gtp'xqrecpluo "qp'yj g'vgttkqt { "qh'Twukc '*gf kqf "d { "P R'Ncxgtqx"cpf "qyj gtu+'*lp'Twukcp+0' O queqy <P cvne."4227.'826'r 0'

Tknqt'LO 0'Dnwpf { 'LF 0'Twuv'CE0'Dqvej ctpknqx'TGG0'J wo r j tg { u'O (E0'Gzr gtko gpvnr'j cug'gs wkrkdtk'qh'c" O qwpv'U0'J g'gpu'tj { qf cekg'c"htco gy qtn'ht'kpvtr tg'kpi "et { ucnk'cvkq'r cvj u'lp" f gi cu'kpi "ukreke" o ci o cu'I'Eqpvtkdw'kpu'qh'O kpgtcni { "cpf "Rgvtqmi { ."4237.'"xqr0392'ku080'

Uj ej gtdcnqx.'X0F 0'Rnej qx'R0I 0'Kdgnqx'R0G0'Uj kr o cp'LOU'Rrci kqercug'| qpkpi "cu'cp'lpf kcvqt'qh'o ci o c" r tqeguugu'cv'Dgl { o kpp { "Xqrecpq."Mco ej cvne" I'Eqpvtkdw'kpu'vq"O kpgtcni { "cpf "Rgvtqmi { ."4233." X084.'Ku03.'r 0: 5/; ; 0'

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