

!¹¿i¶µ¶í©ó¶}±ò©íÃó³-Ãä½tÃú¶Æ¼òÀÀ¶\~à;C

Direct3D «ü©w¨ã D3D µwÁé¶[³t~àαO²ºÃä¶Ü¾¼¹¶¶±¶dÀ³,Ó¶i¶H°ð¡æ³»ÃíÃú¶Æ©íÃä½tÃú¶Æ;C¹³¨Ç¹CÀ,µL²k¶
¿½T¡a-d_ß D3D µwÁé®Ã~à;A¡ý-O«o»ÝnÃä½tÃú¶Ææ´©;C¿i¾¼Ü¹¿i¶µ±N¶i¶H½T«O±±²º NVidia ¹¿¿³B²z¾¼¹¶i¶H¶
¿½T°ð¡æ!¹Ãp¹CÀ;C

³o¨Çzî¶µ®e³\±z±±¨îÅX°Êµ{;²º¥·Æ³B²z¥¨`à;C

¥·Æ³B²z-Oπ@ºØ¶Í©ó¨İ 3D º«¥óÄä½t¥·Æ¥H@ø°£¿÷¾4|²-¥~Æ[²º§p³N;C½Dª`·N;A±Ò°Ê¥·Æ³B²z¨Åπ£.¨İ©Ò!³
Direct3D µ{;¶;Û°Ê´yÄ,¥·Æ³B²z«á²º¼v¹³;C¥·Æ³B²z¥²¶.¶bÀ³¥¶µ{;¶ä´©®Éπ~`à¥¿±`πu\$@;C

®e³\±zjî³/4Ü¥·Æ³B²z"ú¼/4Ëæè!;C

±z¥i¥H;b'£"Ñ³!§ÖªªÀ³¥îµ{!;®Ä¯à»P'yÄ,³î"í«~½è¼/v¹³æ\$¶!;½Ö¾/4ä³]©wÈ;C

®e³\±zjî³/4Û¹îšî³B²z³/4¹©Ò¥î²ºîÛ°Ê³B²z MIP ¶K¹î²ºæèîîîC

±z¥î¥Hjî³/4ÛÂù½u©Ê©î²T½u©Ê MIP ¶K¹î³B²zæèîîîAÂù½u©Êæèîî³q±`¥î¥H

´£¨Ñšóî²º®Ä`àîAîÓ²T½u©Êæèîî«h³q±`¥î¥H´£¨Ñšóª«~½è²º/4v¹³îC

®e³\±z½Ö¾ã MIP ¶K¹ªº LOD;]ºè²Ó«x; ^º¾@t;C

,û\$Cºº¾@t±N·|´£"Ñşó;nºº¼v¹³«~½è;A!Ó,ûºººº¾@t«h·|

´£ºªÀ³¶íµ{;ªº@Ä`à;C±z¶i¶H;b;u³|´Í¼v¹³«~½è;v»P;u³|´Í@Ä`à;v¶\$¶;ººªÓ¹w³]º¾@tÈ¶¶¶¶;æ;í¾Ü;C

³o¼Ë°µ¶i¶HÁý¹î§í³B²z³¼¹¶RαA|a±N«ü©w¼Æ¶q²º"t²í°O¾4ÐÁé¶í©ó§÷½è¶K¹Ìx|s°í;j]Áã¶Ü¾¼¹¶¶±¶d¶»"-
|w,Ë²º°O¾4ÐÁé°£¶~;^;C

µù;G ¶i«O`d¶í©ó§÷½è¶K¹Ìx|s°í²º"t²í°O¾4ÐÁé³)¶j@e¶q;jA-O@Ú¾4Ú±z¹q,£¶W;w,Ë²º¹éÁé RAM @e¶q"Ó-
p²â²º;C"t²í RAM ¶V¶j;A±z¶i¶H³]©w²ºË'N¶V¶j;C

¹³]©wË"Ãα£·|¼vÁT°t³Æ AGP Áã¶Ü¾¼¹¶¶±¶d²º"t²í;C

±z²º NVidia ìj\$î³B²z³/₄¹¥i¥H;Û°Ê³B²z MIP ¶K¹î;A¥H´£°²¶x-y±Æ²º§÷½è¶K¹î¶Ç°e®Ä²v;A~Ã
´£~Ñ§ó°²²²À³¥íµ{;j @Ä~à;C

!ý-O;A¥@`ÇÄ³¥íµ{;j;¥i~àµL²k;B;Û°Ê²£¥í²º MIP ¶K¹î±Ò°Ê®É¥¿½TÄã¥Û;Cn§ó¥¿³o`Ç°ÝÄD;A½D´îαÖ;Û°Ê²£¥í MIP
¶K¹îµ¥~Ä²º;¼Æ;A²½`½v³³¥i¥H¥¿½TÄã¥Û-°²î;C´îαÖ MIP ¶K¹îµ¥~Ä²º;¼Æ³q±`¥i¥H®∅°£§÷½è¶K¹î²º²
£¹i>ô©î;µe±¼¹µö;v²º°ÝÄD;];ý-O³o¼Æ<o|°§C²@`Ç®Ä~à;^;C

!²j!µ®e³"ï¥íαT½u©É MIP ¶K!ï»¼;â;C

®e³\ MIP ¶K!ï»¼;â±N¥i¥H'£°²À³¥îµ{;i²º®Ä-à;A;ý-O«o|°\$Cα@ "Ç¼v¹³«~½è;C|b-Y"Ç±;²pαU;A¼v¹³«~½è²º;ò¥
ç"Äα£®e©ö¹;Ä±;A;]!±z¥í-à·\$Æ±æ³z¹L±Ò°Ê!¥\-à"Ó"ú±oÄB¥~²º®Ä-à;C

!z!µ¥i¥H!b¥p;Ä'õºº OpenGL À³¥!µ{!;¥±ò°ÊÄ½¥¥\`à;A³o¼Ë¥i`à|´£ª@Ä`à;C!p²GÃö³¬!z!µ;AOpenGL ±N·|
"i¥!;i¥,°i¥ó¥Ç°e`Ó±N,ê@Æ±q!±½w½Ä°iÄ½Ä`i«e±½w½Ä°i;C

!¹¿ï¶µ¥ï¥H±j¨¨iÅX°Êµ{!;!bA½¶¶«áµ¥«Ý VBlank °T,¹;C

Ãö³¬¹¿ï¶µ¥ï¥H®e³\í@Ø³t²v°ª©óÅã¶Ü³¼¹ªª§ó·s²v;A;ý¬O³o¼É¥í¬à·|²£¥íµøÄ±°Æ§@¥í©Mµe±¼¹µöªª°ÝÃD;A±q;Ó-
°§CαF¼v¹³«~½è;C±Ò°Ê¹¿ï¶µ«h¥ï¥H¨¨iÅX°Êµ{!;µ¥«Ý VBlank °T,¹;C

±zrwÀx!s²q!Ùq³]©wÈ;j]©î;u½õ¾ãÈ;v;^²M³æ;C;î³¼Û;¹²M³æææ²²æ@Ó¶µ¥Ø±N·|±Ò°È³]©wÈ;Cn®M¥î³]©w-
È;A½D;î³¼Û;u½T©w;v©î;u®M¥î;v«ö¶s;C

©e³\±z±N¥Ø«e³]©wÈj]¥]-A;uDirect3D - ¶i¶¥;v¹i,Üæè¶ðææ²³]©wÈ;^Àx;s¬°;Úq;u½Ö³4ãÈ;v;CæwÀx;s²³]©wÈ±N·|
·s¼W"ì¬Ù³4F²²M³ææW;C

¡bšä"ì" S©w Direct3D ¹CÀ,²³]©wÈæ§«á;A½Ð±N³]©wÈÀx;s¬°;Úq½Ö³4ãÈ;C³o¼È±z
´N¥i¥H;¡b±Ò°È¹CÀ,æ§«e"³³t²Ö²A Direct3D;A!ÓµL»ÝæÀ§O³]©w" CÓ¿i¶µ;C

®e³\±z±N¥Ø«e³]©wÈÀx|s¬°;Ûq;u½Ö¾ãÈ;v;CæwÀx|s²º³]©wÈ±N·|·s¼W¨¨-Û¾F²ºM³ææW;C
|bšä¨¨S©w OpenGL À³¥|μ{;;²º³¨¨Ï³]©wÈæ§«á;A½Ð±N³]©wÈÀx|s¬°;Ûq½Ö¾ãÈ;C³o¼È±z
´N¥i¥H|b±Ò°Êμ{;;æ§«e¨¨³³t²ÖºA OpenGL;A;ÓμL»ÝæÀ§O³]©w¨CÓ¿i¶μ;C

§R°£¥Ø«e!b²M³æππζ!©w²º;Úq³]©wÈ;C

±N©Ò;³³]©wÈÁÙ;Û"ä¹w³]È;C

ÄäÿÜæ@Ó®e³\±z;Ûq¨ä¥L Direct3D ³]©wÈªª¹ÿ,Üæè¶ó;C

!²z!¶µ¥i¥HÄÜ\$ó¶K¹!¹³-À;]S÷½è¶K¹!¶, -À; ^²ºµwÁés±½è¶K¹!©w\$}æè®×;C
öÜ\$ó³o"ÇÈ±N·|ÄÜ\$ó©w,q¶K¹!¹³-À·½²º;ì,m;C¹w³]È»P Direct3D ³W®ææ@P;C!³"Ç³nÁé¥i-à·|
\$Æ±æ;B\$O³B©w,q¶K¹!¹³-À·½;C;p²G«·s©w,q¶K¹!¹³-À·½;A«h!¹ÄpÀ³¥!µ{;²º¼v¹³«~½è±N·'£º²;C±z¥i¥H"i¥i·Æ'í±
±"i;b¶K¹!¹³-À¥²æW"æ»Pææ¥;ì,mæ\$¶;½Ö¾ä¶K¹!¹³-À·½;C

!^z!¶µ@e³\±z`î CPU ¥¡¥H!b¹îš!´¹xù¶¶} ©l³B²zα\$«e·Ç³Æ²²!¶@Ø¼⁄Æj];b VSYNC Ãö³¬@É;^;C
|b¬Y`Ç±;²pαU;A®e³\²²¹w¥ýµÛ;â¹!¶@Ø¼⁄Æ¶V²²;A!^À³·n±i;B¹CÀ,¥x©ÎÁä½Lµ¥,Ë,m²²;u¿é¶|©µ½w;v´N¶Vα[;C
|p²G±z;b²±¹CÀ,®É;A³s±µ;Û±z²²¹q,£α\$¿é¶|,Ë,m¹³©úÅä;^À³©µ½w²²²{¶H;A½D´îαp¹Ë;C

±N©Ò;³³]©wÈÁÙ;Û"ä¹w³]È;C

Ⓜ e³\±z½Ö¾ã!b OpenGL À³¥{μ{;ππÃãÛªº§÷½è¶K¹ĩπ§¼v¹³«~½è;C
³ĩ"ĩπÆ¥HÀò±³ĩ"ĩ¼v¹³«~½è¥H³¡ºªª¼v¹³«~½è-º§÷½è¶K¹ĩμÛ!â;A¥HÀò±³ĩ"ĩªº¥~Æ[;C
³ĩ"ĩπÆ¥HÀò±³ĩ"ĩ®Ã~à¥H²π§Cªº¼v¹³«~½è-º§÷½è¶K¹ĩμÛ!â;A¥H'fºªÀ³¥{μ{;ªº®Ã~à;C
½Ö;X"ĩ¥ĩπWz"âºØ¥\~àªºÖ;X;C¹-º¹w³]È;C

OpenGL © `GL_KTX_buffer_region` 3D
C³o¼E°µ¶i¶H"ĩä'©!©µ!ù¶\~à²º

@e³\|b GL_KTX_buffer_region ©μ;ù¥\
~`à±ò°Ê®É"ï¥¥»¾÷¼v¹³°O¾ΔÁé;C;ý-O;A;pªG¥i¥îªº¥»¾÷¼v¹³°O¾ΔÁé:Ö©ó 8MB;A«h·|μLªk±ò°ÊÂù¥±©μ;ù¥\
~`à:ä´©;C

Ⓜe³\±z«ü©w PCI §÷½è¶K¹í°í²º³]xjⓂe¶q;C

|b¨ã|³¨→°÷°O¾⁄⁄ÐÁé²º PCI¨¨t²íxW¾⁄⁄W¶[;¹É±N¶í¶H©úÁã|a´£°²x@¨¨Ç OpenGL Á³¶íμ{;í²º@Á¨à;C

μù;G ¶í«O¨d¶í©ó OpenGL §÷½è¶K¹íÁx;í²º¨¨t²í°O¾⁄⁄ÐÁé³]xjⓂe¶q;A→O@Ú¾⁄⁄Ú±z¹q,£xW;w,Ë²º¹éÁé RAM
;Ó©w;C¨¨t²í RAM ¶Vxj;A±z¶í¶H³]©w²ºÈ´N¶Vxj;C

|¹³]©wÈ¨¨Áx£·|¾⁄⁄vÁT°t³Æ AGP Áã¶Ü¾⁄⁄¹x¶±¶d²º¨¨t²í;C

·Æ´Í±±¨i®e³\±z¬°¿i©w²º¡â±m³q¹D½Ö³¼ã«G«x;B¹iπñ«x©Í¡±º¿È¿C

¡â±m,É¿¿±±¨i¿i§U±z¡bÅã¿Û,Ë,mπW½Ö,É¨Ó·½¼v¹³»P¨ä¿é¿Xπ§¶¡¿º¿ú«x®t²§¿C¹¿\
¬à¿b¨i¿¹¼v¹³³B²¿À³¿¡µ{¡¡®É«D±¨¹³¿¡¿A¿¡¿i¿H¡bÅã¿Û¾¼¹WÅã¿Û¼v¹³®É«·s²¿¹¼v¹³¡]¡p¬Ûπù¿^¿¡A¨Ã
´É¨Ñ§óè½T²º¡â±m¿C

¡Ó¿B¿A«Û¿h¨i¿¡ 3D ¿[³t¿\¬à²º¹CÀ,µe±³¿«Û·t¿C¡b©Ò¿³ÅW¹Dππ¼W¿[-Û¿P²º«G«x©M¿]©Í¡¿^¿±º¿-
È±N¿i¿H¨i³o¨Ç¹CÀ,µe±§ó«Gπ«¨Ç¿A³o¼È±z¿N¿i¿H²M·¿¬Ý¨É¹CÀ,µe±¿A§Ö¾Ö²º±¹CÀ,πF¿C

©e³\±zjî³¼Ü¶Ñ·Æ´Í±±´´³²¹;â±mÀW¹D;C±z¶i¶H±ÀŞO½Õ³¼ä-õ;â;B²ñ;â©ÍÁÂ;âÀW¹D©Í;P©É½Õ³¼ä³o±TÓÀW¹D;C

±m|â|±½u^{a9}išlĀã¥Ü;C;|±½u±N·|b±z½Ö?¼ã'iπñ«×;B«G«×©î|÷°;È®ÉšY®ÉĀÜ\$ó;C

¿i³¼Ü!¹¿i¶µ±N¥i¥H“í“t¿!;b«·s±Ò°Ê Windows ®É!Û°ÉÁÛi±z!b!¹³B©Ò\$@²º!â±m½Ö³¼ã;C
µù;G |p³G±z²º¹q,£|bºò,ô±W°õ!æ;A«h“t²!±N·|;b±zµn±j Windows «á½Ö³¼ã!â±m;C

±zκwÀx!s²q;Ûq;â±m³]©wÈκξ²M³æ;C;î³¼Û;¹²M³æκκ²²κ@Ó¶|μ¥Ø±N·|±Ò°Ê³]©wÈ;C

Áý±z±N¥Ø«e^â!â±m³]©wÈÀx;s-°;Úq³]©wÈ;CαwÀx;s^â³]©wÈ±N·|s¼W^ˆˆ-Ú¼F^â²M³æαW;C

§R°£¥Ø«e!b²M³æææj!©w²º;Úq!â±m³]©wÈ;C

±N©Ò;³â±mÈÁÙ;ÛµwÁé²º¹¼t³]©wÈ;C

®e³\±zjî¼Ü!ÜðvÅã¥Ü¾¹²³p®É¼Ò!;G

!Ü°Ê°»´ú®e³\ Windows ¾±µ±qÅã¥Ü¾¹²³»´±µ|¬¥¿½T²³p®É,ê°T;C!¹¬°¹w³]-
Ë;C½Ðª`·N;A¬Y`ÇÂÂ;Åã¥Ü¾¹²³i¬à¤£¤ä´©!¹¥\`à;C

¤@`ëp®É¤½;¡©Î GTF ¬O¤j;h¼Æ,û·s!;µwÅé`Ï¥î²³¼Ð·Ç;C

Â÷´²Åã¥Ü¾¹²³p®É©Î DMT ¬O¤@²Ø,ûÂÂ²³¼Ð·Ç;A|b¬Y`ÇµwÅé¤¤¤´µM`Ï¥î¹¼Ð·Ç;C;p²G±z²³µwÅén`D`Ï¥î
DMT;A½Ð±ò°Ê¹¿i¶µ;C

zĩ¼Ü!¹zĩ¶µ¥HÃö³¬ÅX°Êµ{;i´£"Ñ²º´â¼Ð\$Ö"ú¥\`à;C

!pªG·Æ¹«´â¼Ð;b°ö;æ¬Y"ÇÀ³¥Íµ{;i;®ÉµLªk¥¿±`Åã¥Ü©Î££\$¹³¼ã;A½ÐÃö³¬´â¼Ð\$Ö"ú¥\`à;A³o¼Ë±N·|\$ó¥
¿.Ó°ÝÃD;C

!pªGκwÅÛ\$ó!¹³]©wÈ;A«h±z¥²¶·«·s±Ò°Ê Windows π~¥i¥H"Ï·s²º³]©wÈ¥Í@Ä;C

!1zi!µ¥i~¾xîiÂX®j²ºÁl°}1½v¹³¶i!æ¹³~À´;Ál²k;C

!pªGn!bÁl°}¹i©ñxj®Éx£nÁýÃã¥ÜÂX°Êµ{!i~ä¶i!æju~XxÆiv³B²ziA½Dzi³4Ü!¹¶µ¥Ø;C

!pªGxwÂÜ§ó!¹³]©wÈ;A«h±z¥²¶·«·s±Ò°Ê Windows x~¥i¥H~i·s²º³]©wÈ¥í®Ä;C

3o¼Ë°µ·|Ãö³¬Ã,»s|±½uªª GDI µwÁéÿ[³tÿ`à;C

!pªG±zçî¾Ü!¹¶µÿØ;A`t²î±N±£·|`îÿ!µwÁé;A;Ó·|±j`îÃãÿÜÃX°Êµ{;j`îÿ! Windows ªªªª¾¾÷ªc`Ó
´yÃ,¶é°é;B¾ªð¶é§î±í©·½uµÿ;C

!pªG±wÁÜ§ó!¹³]©wË;A«h±zÿ²¶·«·s±Ò°Ê Windows ±~ÿiÿH`î·sªªª]©wËÿ!@Ã;C

±N NVidia QuickTweak 1ÿÛ·s¼WÛ Windows µs@!C;C

!1ÿÛ@e³\±z³z¹Lα@Óæè«K³§ÖÄã;ÿi³æ;A;µ\$Ö³t;ajv@MÿÍ©Ò;³Ûq Direct3D;BOpenGL ©Í!â±m³]©w-
Ë;C!¹ÿi³æÁÛÿ]stÿÍ©óÁÛ¹w³]Ë»P!s"ú;µæ³@e-ÄãÿÛ¼¹;v¹ÿÛæè!ó³µÿØ;C

©e³\±z!b Windows πu\$@!CαW;Aζi³4Ü¥í¥H¥N³í QuickTweak π½¥íμ{!;³ºi¥Ü;C
±q²M³æπζi³4Ü±znÅã¥Ü³ºi¥Ü;CμM«áζi³4Ü;u½T©w;v©Í;u©M¥í;v¥H\$ó·sπu\$@!Cπ³ºi¥Ü;C

žĩ¼Ü!žĩŕµŕĩŕHÃö³-ÅX°Êµ{;ĩ-ŕ"Ç CPU "ĩŕŕ²¼W±j«-«üŕO²²æä´©;C
-ŕ"Ç CPU æä´©²²ŕŕ[²² 3D «üŕO;A³o"Ç«üŕOŕŕŕH»²ŕU NVidia ¹ŕŕŕB²z³¹"Ã´ŕ²² 3D
¹CÀ,©ÎÃ³ŕŕµ{;²²@Ã-à;C!žĩŕµ@e³\±z;ŕÅX°Êµ{;ŕæÃö³-ŕ³o"Ç²²ŕŕ[²² 3D «üŕO²²æä
´©;C³o;ŕŕŕŕŕæ@Ã-àŕŕŕ.û©Î-G»Ü±Æ°ŕŕÉ«Ü!³ŕŕ;C

¿î¼Ü!¹¿î¶µ¥í¥HÃô³- VBlank µ¥«Ý¥\`à;C

¥çºÜ;uÃö³- VSYNC;v;A¥!@e³¹q,£¥ß§Y±N¼v¹³´yÃ,;b¿Ã¹õ±W;A!ÓµL»Ýµ¥«ÝÃã¥Ü¾¼¹²º;P" B««²½! ^±½°T,¹;C³o·|
"î!î@Ø³t²vº²©óÃã¥Ü¾¼¹²º§ó·s²v;A!ý-O¥í`à·²£¥íµøÃ±°Æ§@¥í©M¹î¹³;u¼¹µõ;v²º°ÝÃD;A±q!Ó°§C¼v¹³«~½è;C

Ãð³¬¡¹ï,Ûæè¶ð`ÃÄx¡s©Ò§@ººÄÛ§ó;A¶H«K±z¡b¡u`ä¶Læº@e¡v¹ï,Ûæè¶ðææ
¿ï¾Û¡u½T©w¡v©Î¡u©M¶¡¡v©É¡A`ï³o`Ç³]©wÈ¶¡@Ä¡C

Ãó³¬!¹¹ÿ,Ûæè¶ð;Óæ£Àx|s©Ò§@²²ÂÛ§ó;C

!¹¿ï¶µ@e³\±zÃö³¬ÅX°Êµ{;|;²º DirectX 6 ¥\`à;C

¬Y"Ç¬°,ûÂÂª©¥»²º DirectX ½s¼g²º¹CÀ,¡A¥i¬àµLªk°t;Xªw|w,Ë²º DirectX 6 ¯ÍÅX°Êµ{;|;ªª±Ò°Ê²º DirectX 6 ¯ä
´©¥\`à¥¿±`°ð;æ;C¿i³¼Ü!¹¿ï¶µ¥i±j"iÅX°Êµ{;|;|b DirectX 5 ¬Û®e¼Ò;ªU°ð;æ;A¥H«KÂÂª©¹CÀ,¥i¥H¥¿±`°ð;æ;C

!pªG±zn°ð;æ¬Y"ÇµLªk¥¿±`±Ò°Ê©Í°ð;æ²ºÂÂª©¹CÀ,¡A½Ð"ï¥Í¹¿ï¶µ;C

Åy±z\$PÂ_pπ@Ó·Æ¹««ö¶s·|!b³æ«öπu\$@|C¹!¥Ü®ÉÅã¥Ü;ï³æ;C

¶}±ò©îÃö³¬½T»{°T®§;C

!b±qzï³æ,ü¶J Direct3D ©î OpenGL ²Ö²A®É;A;p²G±z±£nÅã¶Ü½T»{°T®§;A½D®Özï³zï¶µ;C

!pªG±zn“í¥í 3D ©ÄªG“ÓÄã¥Üæu\$@!Czĩ³æ;A½Đzĩ¼Ü!¹zĩ¶µ;C

!b¥HSC©ó³!°ãä´©,ÑªR«x²º,ÑªR«x°ó;æ®É;A³o`Ç;ï¶μ®e³\±z\$PÂ_¼v¹³; b¥ºOÂã¥Ü¾¼¹κWººÂã¥Ü;ì,m;C

!pªG±zn“İzİ©wªºzİ¶µ; b“C, ±Ò°Ê Windows ©É¥Í®Ä;A½zDzİ³%Ü;¶µ¥Ø;C

½Ð¨ï¶ï½bÀY«ö¶½Ö¾ãÄã¶Ü¾¼¹Wªª@à±Äã¶Üï,mjC

© Ú¾Ú¥Ø«e²º,Ñ²R«x»PŞó·s²v;A±N@à±«³]!Ü"ä¹w³]!ì,m;C

3o`Çziïµ@e³\±z;î¼Ü;é¥XÄâ¥Ü,Ë,m;J@Ú¼ÚÄâ¥Ü¼¹±¶d©Òæä´©²²,Ë,m;A±z¥i¥H;î¼ÜÄâ¥Ü¼¹;B¼Æ;î¥-
²OÄâ¥Ü¼¹©î¹µø;^;C

¶}±ò¤@Ó¥i|b¨¨ä¤¤¬²{¥fªªÃã¥Ü,Ë,m!Ûq³]©wÈªªμøμ;C

Åã¥Ü¶í©ó¹qmø¿é¥Xªº¥Ø«e®æ¡¡»P°éSO³]©wÈ¡C

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!12M³æ@e³\±z@Ú³/4Ú!Ûπν©Ò©~!í²º°é@a"Óζĩ³/4Û¹qμθζέ¥X@æ!;C

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