

⌘Ø³ãéµÑÇàÅ×Í;¹Öéà¾×èÍ;ÓË¹´ãËé;ÒÃ´ÓÁÍ fog table
·ÖŞÖ¹EA×İäAè·ÖŞÖ¹

Direct3D ĖÁÒÂ¶ÖŞ ;ÒÃĩ´áÊ´Ş¼Å¹ÖéÊÒÁÒÃ¶áÊ´Ş¼Åá°° D3D â´ÂáÊ
´Ş¼Åä´é·NéŞá°° vertex fog ĖA×İ table fog

à;A°ÖŞ»ÄĐàA·äAèĖÖAQ¶¹Ö⌘ÇÖAĖÖAÒÃ¶Ò;İÒÃĩ´áÇÃİ D3D ÁÒãªéª
´eàuçA»ÄĐĖÖ·ÖAQ¾áÄĐueÍŞãªé table fog à·èÖ¹Né¹
;ÖAäÅ×İ;µÑÇàÅ×Í;¹ÖéªèÇÄãÊéª¹èã´ª´éÇèÒà;A»ÄĐàA·
NŞ;AèÖÇ·Đ·ÖŞÖ¹ä´éµÖA»µÖ;N°â»Aà«Ėà«İAİ;AÖ¿Ö;¢ÍŞ NVidia

μÑÇàÅ×Í;¹ÖéªèÇÃãËéꝑØ³ÊÒÁÒÃ¶Â;àÅÔ;ìÒÃãªéꝑØ³ÊÁºÑμÔ DirectX
àÇÍÃìªNè¹ãÊAè æ ã¹ã´ ÀàÇÍÃìä´ é
à;ÁºÒ§»ÃĐàÀ·.Öèà¢ÖÂ¹¢Öé¹à¾¼×èÍãªé;Ñº DirectX àÇÍÃìªNè¹;èÍ¹ æ
lÖªãAè·Ô§Ô¹¶éOꝑØ³μO´ μNé§ DirectX àÇÍÃìªNè¹ 6 ÊÅ×Í 7 äÇé
;OÀàÅ×Í;μÑÇàÅ×Í;¹Öéà»¢¹;OÀ;OÊ¹´ãÊéAĐºº·Ô§Ô¹ã¹âÊA´ DirectX 5
¹N§¹Né¹à;AÀØè¹à;èO´Ô§ÊOÀOÀ¶·.Ó§Ô¹ã´ éÍÃèÔ§¶U;μéÍ§
ãªéμÑÇàÅ×Í;¹ÖéÊÒ;ꝑØ³μéÍ§;ÒÃÃÑ¹à;ÁÃØè¹à;èÒºÒ§ÃØè¹·ÖèäÁè·Ó§Ò
¹ÊÅ×Í·Ô§Ô¹ãAè»ìμÔ

ãĖĖÎQÃĩ áÇÃì»ÃÑ⁰ðèÒðÇÒÁÅÖ;ϕÍ\$ Z-buffer
ãĖĖμA\$μOÁ·Oèál»¾¼ÄÖàð^aN¹μéÍ\$;OÄ
â´Â»;μÔ ðØ³ðÇÃ;ÓĖ¹´ãĖĖμÑÇàÅ×Í;¹Õé·Ó\$Ò¹
A;àÇé¹ã¹;Ä³Ö·ÖèμéÍ\$;OÄ;OĖ¹´ Z-buffer àÍ\$ ĖÒ;äÁè;ÓĖ¹
´ãĖĖμNÇàÅ×Í;¹Öē·Ó\$O¹ â»Äá;AAál»¾¼ÄÖàð^aN¹·Oèä^aé Z-buffer
«Oè\$äAèμA\$;Ñ⁰·Oèä´é;OĖ¹´ðèOð¹¿Ö;äÇé ¨ĐäAè·Ó\$O¹

ÊÒÁÒÃ¶àÅ×Í;ãªéà·²Ô²ÊÓËÃÑºÑ¿à¿ÍÃì;ÒÃáÊ´§ÀÒ¾ 3 ÁÔµÔä´é
²Ø³ÊÁºÑµÔ¹Õé.ÓãËéÌÒÃì´áÇÃìÊÒÁÒÃ¶ãªé;ÒÃ.Ó§Ò¹µèÒ§ æ
ÊOEANºÑ¿à¿ÍÃì;ÒÃáÊ´§ÀÒ¾ 3 ÁÔµÔä¹áì»¾ÁÔà²Ñ¹ 16 °Ôµ
à¾×èìãËéÊÒÁÒÃ¶EAéO§ÀÒ¾ 3D ä´éÁÔ»AÐÊÔ.ÔÁÒ¾EÛ§ÁÔè§¢Öé¹

ıÖÃıÓĚ´ãĚéáÊ´şâÂıé NVidia ã¹ Direct3D

μÑÇàÅ×ıı¹Œé¨ĐáÊ´şâÂıé NVidia

·ÖèÅØÅÀèÖŞçİŞ¨İAO^{3/4}ç³Đ·ÖèAN¹áı»^{3/4}ÅÔàσªÑ¹ Direct3D

â»Ãà«Êà«ÍÃjÃÒ¿Ôj NVidia ÊÒÁÒÃŦÊÃéÒŠÁÔ»áÁç»â
ÁINuâ¹ANµOà³⁄₄×èl³⁄₄OèA·Nés»AĐÊO· ÔAÔ³⁄₄ã¹jÔAÊèš¢éÍAUÀjÒÃÊÃ
éOŠ³⁄₄×é¹¹⁄₄ÔÇ¹⁄₄èO¹⁰NÊáAĐ»AĐÊO· ÔAÔ³⁄₄ã¹jÔA·OŠO¹¢ÍŠál»³⁄₄AÔàª¹N¹
ÍAèÒšäÃjçuÒÁ â»ÃájÃÁáÍ»³⁄₄AÔàª¹N¹⁰Òš»ÃĐàÀ·ÍÒ·ÁŦjÒÃáÊ
š¹⁄₄A·OèaAèŦUjµéÍšEOjOE¹ ãÊéãéªØ³EA⁰NµOAO»áÁç»INuâ¹ÁÑµÔ
jOAáé»NÊO ãÊéªØ³A·AĐ·N⁰jOAÊÃéQŠAO»áÁç»Áš ·¹jÇèO·ĐáÊ
š¹⁄₄AŦUjµéÍš jOAÁ·AĐ·N⁰AO»áÁç»·ĐEOAQÁŦáíé»N-
EOjOACOSµOáÊ¹èš³⁄₄×é¹¹⁄₄OÇãÊè "ãAèAOAÍÁµèl"
(áµè·Đ·ÔãÊéªØ³AO³⁄₄¢ÍšjOAaÊ š¹⁄₄AA·Áš·éÇAaª¹jÑ¹)

^aèÇÂãĚé¤Ø³ÊÒÁÒÃ¶àÅ×Í;ÇÔ,ÕÁÔ»áÁç»ÍÑμâ¹ÁÑμÔ·Õèâ»Ãà«Êà«ÍÃì;Ã
Ö¿Öì"Đã^aé

¤Ø³ÍÒ"àÅ×Í;ÇÔ,ÕìÒÃÁÔ»áÁç»á^{oo}ă^oÅÔà¹ÕÃÃĚÃ×Íá^{oo} 8-tap anisotropic
â´A·Oèá^{oo}ă^oÅQă¹ÔAAì"ĐãĚé»AĐÊÖ· ÖAO¾·Oè´ÖìÇèÖ ã¹¢³Đ·Oèá^{oo}
anisotropic "ĐEOAOA¶áE´šAO¾ă´é¤Å^aN´ìÇèO

⌘Ø³ÊÒÁÒÃ¶»ÃÑº⌘èÒä°áíÊ LOD (Level of Detail) ã¹;ÒÃÁÔ»áÁç»ä´é
⌘èÒä°áíÊ·ÕèµèÓ·Ð·ÓãËé⌘Ø³ÀÒ¾¼¿Í\$ÀÒ¾¼´Õ¿Öé¹
ã¹¿³Ð·Öè;ÔÁà¾¼ÖèÀ⌘èÒä°áíÊ·ÐªèÇÁà¾¼ÖèÀ»ÃÐÊÔ·ÔÀÒ¾¼;ÒÃ·Ó\$Ò¹¿Í
\$â»Áá;ÁÁáí»¾¼ÁÒàªN¹ ⌘Ø³ÊÔÁÔÃ¶à×Í;·Ô;⌘èÒä°áíÊ·Ô¿ÍÁµì 5 ⌘èÔ
àÁÔèÀ·Ô; "⌘Ø³ÁÔ¾¼¿Í\$Ô¾¼´Ô·ÖèÊØ" ä»¹¶Ô\$
"»ÃÐÊÔ·ÔÁÔ¾¼;ÔÁÂN¹·Ô·ÖèÊØ"

ÃÒÂ;ÒÃ;ÒÃµÑé\$µèÒá[∞];ÓË¹´àís (ËÃ×Í "tweak") .ÕèµØ³á´é°Ñ¹.Ö;äCé
ãÉéàÃ×Í;µNCàÃ×Í;Ö;AÒÃ;ÒÃà^{3/4}×èlàAÕÃ;ã^aésÒ¹;ÒÃµÑé\$µèÒ.Õèµéís
;ÒÃ"Ö;¹Né¹ãÉéµÃÔ;»ØèA "µ;Ã\$" ËÃ×Í "µ;Ã\$ã^aé"

ªèÇÃãĚéªØ³ÊÒÁÒÃŦ°Ñ¹.Öj;ÒÃµÑésªèÒ»Ñ°Ø°Ñ¹ă é (ÃÇÁ·ÑésªØ
´j;ÒÃµÑésªèQã¹ă´İĐÄçj; "çelAUÄà¾ŦèAàµŦÄçİS Direct3D") à»ç¹
"AU»ă°°j;ÒÃµÑésªèŦ·Ŧèj;ŦE¹´àİS" àA×el°Ñ¹.Ŧj;ÒÃµÑésªèŦáÄéÇ
ÄĐ°°Đ¹ŦªèŦ¹Né¹ă»à»ç¹ÄŦÄj;ŦÄµel·éŦÄÄŦÄj;ŦÄà ŦÄ·ŦèÄŦİAUè
ĚÄÑS°Ŧj;ªØ³ă´éj;ÒÃµÑésªèŦ·Ŧè´Ŧ·ŦèÊŦ´ÊŦÉÄÑ°àj;Äá°° Direct3D
áÄéÇ äĚé°Ñ¹.Ŧj;ÒÃµÑésªèŦ¹Né¹ăÇéà»ç¹AU»ă°°Ŧèj;ŦE¹´àİS (custom
tweak) «ŦèSªèÇÃãĚéªØ³ÊŦÄŦÄŦj;ŦE¹´ªèŦªj;ŦŦj; Direct3D ä´elAèŦSÄÇ
´àÄçÇâ´ÄäAèµelSµÑésªèŦµNÇàA×İj;áµèÄĐİAèŦSäEAè·NésEA´

ÅºıÒÃµÑéŞ¸èÒÊÕ·Õèä´éàÅ×Í;äÇé¨ÒıÃÒÂıÒÃ

àÃÕÂ;æèÒ´Õ¿ÍÅµìϕÍ§;ÒÃµÑέ§æèÒ·Ñέ§ËÁ´αx¹

áÊ´sä´ÍĐÅçí«ÖèšãªéÊÓËÃÑº»ÃÑºà»ÅÕèÂ¹;ÒÃµÑé\$ªèÒí×è¹ æ ¢Í\$
Direct3D

μÑÇàÀ×Í;¹Öéãªéà»ÃÕèÂ¹ÇÔ_Õ;ÒÃ;ÓË¹
μÓáË¹è§ÇÍ§¾×é¹¹¼ÔÇÇÍ§ǎ·çjà«À (Í§¤ì»ÃĐ;ÍºÇÍ§¾×é¹¹¼ÔÇ)
;ÒÃà»ÃÕèÂ¹¤èÒ¹Öé··ĐÁÕ¹¼ÃµèÍ;ÒÃ;ÓË¹ μÓáË¹è§à·çjà«À´ÔÁ â
A·Oè¤èO´O;ÍÃµì·ĐÉ;¤ÃéÍ§;Nº¤Ø³ËAºNµOÇÍ§ Direct3D
«Í;µíàÇÁºO§»ÃĐàA·ÍÒ·µéÍ§;ÒÃ;ÒA;ÓË¹
μÓáË¹è§à·çjà«ÃÇéµèO§EO;´éÇA ¤Ø³AÒ¾ã¹;ÒÃáÊ
´S¹¼AAO¾¼ÇÍ§ǎ;¾¼AÒà¤ªN¹»ÃĐàA· Ñ§;ÃèOÇ·Đ´OÇOé¹ ËÒ;ÁÕ;ÒÃ;ÓË¹
´ÇéÍÃÛAà·çjà«ÃãËAè·â
´A»ANºá¶¹ºàA×èÍ¹ã»AÒÃĐËÇèÒ§ÁØÁº¹«éÒÃáÃĐ··Ø
´EU¹Ãì;ÃO§ÇÍ§ǎ·çjà«A

â»Ãà«Êà«ÍÃìÃÒ¿Ôìã^aé“Ó¹C¹Ë¹èÇÂ_πÇÒÁ“ÓϕÍ\$ÃĐ⁰⁰·ÕèÃĐ⁰ØäÇéϕÍ\$.Õè
àìç^{03/4}×é^{11/4}ÔÇă^é(¹ì“ÔìĐμÔ[’]μNé\$E¹èÇÂ_πÇÒÁ“ÓϕÍ\$ìÔÃì^áÊ
\$^{1/4}Ãà^{3/4}ÔÀ\$ÍÀèÔ\$à ÔÀÇ)

ËÁÒÂàËμØ: “Ó¹C¹Ë¹èÇÂ_πÇÒÁ“ÓÊÙ\$ÊØ
‘ϕÍ\$ÃĐ⁰⁰·ÕèÊÔÁÔÃ¶¹ÔÃQă^aéÊÀéÔ\$^{3/4}×é^{11/4}ÔÇÊÔÁÔÃ¶^μÓ¹C³ă
‘é“Ôì“Ó¹C¹RAM·ÕèμÔ[’]μNé\$ÍÀUèă¹à^μÃ×èÍ\$^πÍ^{3/4}QCàμÍÀìϕÍ\$^μØ³
ÃÔè\$μÔ[’]μNé\$RAMăÇéÀÔìà·èÔă[’]μèÔ·ÕèÊÔÁÔÃ¶¹ă^aéă
‘éìç“Đà^{3/4}ÔèAAÔìϕÔé¹éÇÀ

ìÒÃμNé\$^{μè}Ò¹Õéă^aéă[’]éìÑ⁰ìÒÃì[’]áÊ[’]\$^{1/4}Å PCI (ËÃ×ÍìÒÃì[’]áÊ[’]\$^{1/4}Å AGP
·Õè·Ô\$Ô¹ă¹ăÊÀ[’]PCI)

àÅ×ÍµÑÇàÅ×Í¹Öéà¾×èÍÂ;àÅÔ;ÖÃ«ÔŞâ¸Ãä¹«ìá¹ÇµÑés
·ÓãĚéáĚ´ŞÀÒ¾ă»ÂÑŞĚ¹éÒ´Íă´é·Ñ¹·Õâ
´ĀăAèµèİŞĀİăĚéAO;OA«ÔŞâ¸Ãä¹«ìAO¾ă¹á¹ÇµÑés;ÅÑºă»·Öè´ÍÀÒ¾
áĀĐªèÇĀăĚéİµAO;OAáĚ´Ş¼ĀĚUŞ;ÇèOİµĀO;OAAOà¿ĀªİŞ´ÍáĚ
´Ş¼Ā áµèİÖ´ĚèŞ¼Ā;ĀĐ·ºµè¸Ø³AO¾İŞAO¾ă´é

μÑÇàÅ×Í;¹Õéãªé;ÓĚ¹´´Ó¹Ç¹;ÒÃÅ´ÃÍÂĚÂÑ;·Õèãªéã¹áí»¾ÅÔàªªÑ¹ D3D
;ÒÃÅ´ÃÍÂĚÂÑ;à»ç¹à·ª¹Ôª·Õèãªéã¹;ÒÃÅ´ "àÊé¹¢ÃØ¢ÃÐ"
«Òè§ºÔ§ªANé§´Ð»AÔ;_¢Ôé¹µOÀ¢¹º¢ÍSAÔ¾¾ 3D
EOĚANºáí»¾ÅÔàªªÑ¹ºQ§IAèO§_ªØ³EOAOA¶àÅ×Í;ä
´éµNé§áµè;OAAºÃÍÂĚÂÑ;ll;ãEéEÁ´ä»´¹¶OSàÅ×Í;ãEéÁÕ´´Ó¹Ç¹ÃÍÂĚÂÑ;ä
´éEUSEØ´

ã^aéµÑÇàÅ×Í¹Õéã¹ìÒÃÅ
´AIAEÂN_jã¹ál»¾¼ÃÒà^aN¹. ÕèäÁèÊÒÁÒÃ¶ã^aé^aØ³ÉÁ^oÑµÔ¹Õéä´éâ´ÂµÃ§
â»Ã´·ÃÒ^oÇèÒ^oÒ§ál»¾¼ÃÔà^aN¹«Õè§äÁèÊÒÁÒÃ¶ã^aéà·^a1Ô^a1Õéä
éìÒ·ÒãÊéäAèÊÒÁÒÃ¶áE´§¼¼Ãä´éìAèÒ§àÉAÒÐÉA ÉÅ×láÁèìÒ`àÃ¹à
ìA_jAO¾¼ä´éµÒA»ìµÒ ^aØ³^aÇAã^aéµÑÇàÅ×Í¹ÕéìAèÒ§AÐAN´AÐÇN§ »Ò
´µNCàÅ×Í¹ÕéÊÒ_j^aØ^{33/4}»ÑÊÒã¹ìÒAäE
´§¼¼Ãä_jAEÃ×láí»¾¼ÃÒà^aN¹«Õè§äAèÊÒÁÒÃ¶ã^aéà·^a1Ô^a_jÒÃÃ´ÃíÂËÂÑ_jä
e

μÑÇàÅ×í;¹Öéãªé;ÓË¹
;ÖÀàμΑΟΑΑ·Ö¹Ç¹à;ÃÁ¢Í§«Ö¾ÖÂÙ;èí¹.Öè·Ð»ÃÐÁÇÅ¼ÅàÁ×èÍªØ³àÅ
Ö;ãªé;ÖΑ«Ö§âªÃª¹«íã¹á¹ÇμÑé§
ã¹ºÒ§;Ã³Ö ÂÔè§ΑÖ·Ó¹Ç¹à;ÃÁÁÒ;¢Öé¹à·èÒã´ "input.Jag"
ÍÖ·μ¹Ε¹Í§μèÍØ»í;Ã³ìμèÖ§ æ àªè¹·ÍÆμÖè; à;Αά¾ ΕΑ×Íá»é¹¾ÔÁ¾ìã´ é
·Ö¢Öé¹
ãËéÁ´ªèÒ¹ÖéÅ§ËÒ;¾ºÇèÒ;ÒÃμ¹Ê¹Í§μèÍØ»í;Ã³ìμèÒ§ æ
·Öèª×èÍΑμèÍΑÙè;ÑºªªÃ×èÍ§ªÍΑ¾ÖÇàμÍΑì»ç¹ã»ÍÆèÖ§ÅèÒªéÒÁÒ;ã¹¢
³Ð·ÖèªØ³àÆè¹à;Α

^aèÇÂãĚéä´ÃàÇÍÃîÊÔÁÒÃſſã^aéÊèÇ¹¢ÂÒÂ OpenGL
GL_KTX_buffer_region ä é

^aèÇÂà¾ÔèÁ»ÃĐÊÔ·ÔÀÒ¾¢ſſã»ÃájÃÁ·Œèã^aéÊÃéÒſâÁà´Å 3D
·ŒèÊ¹N⁰Ê¹Ø¹ſŒÁ·ŒŒŒ¹ÀèÇÁſN⁰ÊèÇ¹¢AŒÁ¹Œé

aèÇÂãĚĚĚÒÁÒÃ¶ã^aéĚ¹èÇÂ[▯]ÇÒÁ^ˆÓĚÓĚÃ[°]áĚ
ˆs^{1/4}Ä^ˆÖĚ¹èÇÂ[▯]ÇÒÁ^ˆÖĚÃĚĚ^ˆé àÁ×èĚĚ¹ãĚĚã^aéSÒ¹ĚèÇ¹ϕÄÒÄ
GL_KTX_buffer_region
ÍĚèÒSãÄĚĚ^ˆÖĚÄ^ˆÓ¹Ç¹Ě¹èÇÂ[▯]ÇÒÁ^ˆÓĚ^ˆĐ⁰⁰¹éÍĚĚèÒ 8 àÄĚĐă[°]μĚ
▯Ø^{3ˆ}ĐăÄĚĚÖÖÖÄ¶ã^aéĚèÇ¹ϕÄÖÄá^{00ˆ}ŮĚNÄà^{3/4}Ä¹ (dual planes) ä^ˆé
ĚÒÃμÑĚS[▯]èÒ¹ŌĚ^ˆĐăÄĚÄ^{1/4}ÄĚ^ˆÖĚĚÄĚä
éã^aéSÒ¹μNÇàÄ×ĚĚ^ˆã^aéSÒ¹ĚèÇ¹ϕÄÖÄ^{3/4}×é¹·ŌèϕÍS[°]ÑĚàĚÍĚÄĚ

jÒÃjÓĚ¹ãĚéãª;ÔÅàµíÃ\ fast linear-mipmap-linear
ĐªèÇÀà¾ŒèA»ĂĐÊŒ.ŒÀŒ¾ŒİŚáİ»¾ŒŒàªN¹
áµèªŒ³ÀŒ¾ŒİŚÀŒ¾ŒİŒ.Ă.ĂŚ
ã¹ĚĂŒŒ æ jÃ³Œ.ªŒ³ÀŒ¾ŒİŚÀŒ¾ŒĐĂ
ĂŚăAèAQj¹Nj.ŒŚ¹Œé¹ªŒ³.ŒŚªÇĂjŒĚ¹
ãĚéãªēŒŒ¹ªŒ³ĚAŒNµŒ¹Œéà¾Œ×ēİãĚé»ĂĐÊŒ.ŒÀŒ¾Œà¾ŒŒèÁŒŒé¹

μÑÇàÅ×Í;¹ÕéªèÇÃãËé OpenGL ÊÒÁÒÃ¶ãªé;ÒÃ·Ó¿ÔÀàμÍÃì anisotropic
ã¾¾×êlã¾¾ÔèA∅³ÃÖ¾¾ϕl§AÖ¾¾

ãĚéàĀ×Í;μŃÇàĀ×Í;¹Ōéà¾×èĬàĀÔ;ĬÒÃãªéá´ĀàÇĬĬĬÊÓĚĀŃªø
´ºŌÊŃèš¾ŌàĚĚÇĬš«Ō¾ŌĀU
«Ō¾ŌĀUºŌš»ĀĐàÀ·Ě¹ŃºĚ¹Ø¹ªØ´ºÓÊŃèš 3D «Ōèšªéä
´é;Ńªâ»Āà«Ěà«ĬĬ;ĀŌ;Ō; Nvidia
ÇĬšºØ³áĀĐà¾ŌèĀ»ĀĐĚŌ· ŌĀŌ¾ãĚéà;ĀĚĀ×Ĭâ»Āá;ĀĀáĬ»¾ĀŌàªªŃ¹
3D μŃÇàĀ×Í;¹ŌéªèÇĀãĚéªØ³ĚŌĀŌĀ¶ĚŃèšĀ;àĀŌ;ĬŌĀãªéªØ´ºŌÊŃèš
3D ¾ŌàĚĚàĚĀèŌ¹Ōéã¹á´ĀàÇĬĬĬ
«ŌèšĀŌ»ĀĐâĀªĬã¹;ŌĀà»ĀŌĀªà·ŌĀª»ĀĐĚŌ·,ŌÀŌ¾ĚĀ×Ĭãªéã¹;ŌĀáé»
NEO

μÑÇàÅ×í|àĖĀèÒ¹Ŏé˘Đ;ÓĖ¹˘;ÒĀĀ˘ĀíĀĖĀñ;á⁰⁰àμçÁĖ¹éÒ˘í
ĖŎĖĀN⁰àμA×è|Ŗ.Ŏèă^aēă˘ĀàÇĬĬOpenGL˘;ŎĀĀ
˘ĀĬĖĀN;à»ç¹ă˘¹Ŏμ.Ŏèă^aēă¹˘;ŎĀáμèŖçĬ⁰çĬŖĬ⁰à˘;μĬăĖĖàĀŎĀ⁰à³/₄×èĬĀ˘
"àĖĖ¹çĀŎçĀĐ" «ŎèŖ»ĀŎ;ăĖĖàĖç¹ă¹⁰ŎŖĀNéŖçŎŎ;ŎĀáĖ˘Ŗ¹/₄Āá⁰⁰
1.5 x 1.5.ĖŎĀŎĀĬĀ˘ĀĬĖĀN;çĬŖĀŎ³/₄ă˘éĬĀèŎŖ˘ŎăĀŎĖĀĀ ç³Đ.Ŏèá⁰⁰ 2 x
2˘Đ.ŎăĖĖĖĀŎ³/₄.Ŏèă˘éĀŎμŎ³ĀŎ³/₄ĀĬăĀŎĖĀĀ

ãĚéä´ ÃàÇÍÃìàíçj«ì»ÍÃìµÃÙ»á⁰⁰³/₄Ôjà«Å¢Í§ÊàµíÃÔâí ã¹¢³Đ¹Õéâ»ÃájÃÁ
OpenGL ``Đã^aéÊàµíÃÔâíáÅĐ``Đã^aéàÅ¹Êì^aÑµàµíÃì¢Í§ÊàµíÃÔâí

ãĚéä´ÃàÇÍÃìàíç;«ì»ÍÃìμÃÙ»á⁰⁰³/₄Ô;à«Åà³/₄×èÍ;ÒÃ«éÍ¹ÀÒ³/₄
à³/₄×èÍãĚéâ»Ãá;ÃÁ OpenGL ã^aéϣØ³ÊÁ°ÑμÔ;ÒÃ«éÍ¹ÀÒ³/₄ä´é

μÑÇàÅ×Í¡¹ÕéªèÇÂãËé OpenGL ÊÒÁÒÃ¶ãªé¡ÒÃ·Ó¿ÔÀμÍÃì anisotropic
à¾×èíà¾ÔèÁ¤Ø³ÀÒ¾¢Í\$ÀÒ¾ â»Ã
´ÊÑ\$à¡μÇèÒ¡ÒÃàÅ×Í¡¤Ø³ÊÁºÑμÔ¹Õé¨Ðà¾ÔèÁ¤Ø³ÀÒ¾¢Í\$ÀÒ¾áμè¨Ð·Ó
ãËé»ÃÐÊÔ·ÔÀÒ¾¢Í\$¡ÒÃáÊ´§¼ÅÅ´Å\$àªè¹¡Ñ¹

àÁ×èí;ÓË¹`ãËëä´ÃàÇÍÃ` OpenGL ``Ñ´ÊÃÃºÑ¿à¿ÍÃ`
´éÒ¹ËÃÑ§áÃÐºÑ¿à¿ÍÃ`íaÊ´§ÀÒ¾ 3 ÁÔµÔäÇé·ÖèÃÐ´ÑºÇÒÁÃÐàÍÕÃ
´¢Í§;ÒÃáÊ´§¼ÃÃÐ´Ñº`ÕÃÇ;Ñ¹

ÇÔ,Õ;ÒÃ¹Õé`Ðä´é¼ÃÃÔè§¢Öé¹ËÒ;ãªéË¹èÇÃÇÒÁ`Ó;ÒÃáÊ
´§¼Ã¢Í§â»Ãá;ÃÃ«Öè§ÁÕËÃÒÃË¹éÒµèÒ§

ËÒ;µØ³äÃèãªé§Ò¹ã´ÃàÇÍÃ` OpenGL `ãËé`Ñ
´ÊÃÃºÑ¿à¿ÍÃ`ÊèÇ¹ËÃÑ§áÃÐºÑ¿à¿ÍÃ`íaÊ´§ÀÒ¾ 3 ÁÔµÔäÇé
´éÇÃ;Ñ¹ã¹·Ø;Ë¹éÒµèÒ§·ÖèáÍ»¾ÃÔàªÑ¹¹Ñé¹ÊÃéÒ§¢Öé¹

µØ³ÊÁºÑµÔ¹Õé`ÐªèÇÃà¾ÔèÁ»ÃÐÊÔ·ÔÀÒ¾¢Í§â»Ãá;ÃÃ OpenGL
«Öè§ãªéË¹éÒµèÒ§ËÃÒÃË¹éÒµèÒ§¾ÃéÍÁ;Ñ¹

μÑé\$⌘èÒãĚéĵÑºâ»ÃájÃÁ OpenGL
·ÕèàÅ×ÍĵäÇéà¾×èÍãĚéâ»ÃájÃÁ·Ó§Ò¹ă´é¼Å´Õ·ÕèÊ∅´

µÑÇàÅ×Í;¹Õéãªé;ÓË¹ÇèÒ¾×é¹¼ÔÇ·ÕèÁÕÃĐ'ÑºÊÕ¹Ñé¹ æ
Đ¹ÓAOãªéã¹â»Áá;ÁÁá»¾ÁÔàªN¹ OpenGL ĒÅ×ÍäAè
µÑÇàÅ×Í; **Use desktop color depth** à»ç¹;ÒÃãªéªÇÒÁà¢éÁ¢ÍÊÕà
ÓAÇ;Nºá'É;ì·Í»¢Í§ÇÓ¹á'ÇÈì
µÑÇàÅ×Í; **Always use 16 bpp** áÅĐ **Always use 32 bpp** à»ç¹;ÒÃ;ÓË¹
ãÊéãªé¾¼×é¹¼ÔÇ·ÕèÁOªÇÓÁà¢éAEO·Oè;ÓË¹ á
'ÄäAèªO¹Ö§¶Ö§;ÒÁ;ÓË¹ ºèÒã¹à'É;ì·Í»

μÑÇàÅ×Í;¹ÕéãéÃĐ°ØâĚÁ;òÃ·Ó§Ò¹ buffer flipping
ãĚĚ·Ó§Ò¹áººàμçÆĚ¹éÖ·ÍçÍšál»¾ÅÖàªªN¹ OpenGL
â´ÂªØ³ÊÒÁÒÃ¶àÅ×Í;ãªéÇÔ·Õ¶èÒÂâÍ¹çéÍÁÙÅªººªÇÍª (Block Transfer)
à¾¾·¿·ÄÖ» (Page Flip) ĚÅ×ÍàÅ×Í;ÍÑuâ¹ÂNµÔ (Auto-select) ;çä´é
μÑÇàÅ×Í;àÅ×Í;ÍÑuâ¹ÂNµÔ·Đ·ÖãĚéä´ÂàÇÍÀìàÅ×Í;ãªéÇÔ, Ö·Öè´Ö·ÖèÊØ
µÖÅªèÖªÍ¹¿·Ö;çÍšÍÖÄÍ·áÇÀì

µÑÇàÅ×Í;¹Õéãªé;ÓĚ¹´;ÒÃ«ÔŞâªÃä¹«ìá¹ÇµÑéŞã¹â»ÃájÃÁ OpenGL

µÑÇàÅ×Í; Always off

“ĐăĂèãªé;ÔA«ÔŞâªAä¹«ìá¹ÇµÑéŞ¢ÍŚáÍ»¾⁄₄ĀÔàªªÑ¹ OpenGL ·ÑéŞĚÁ´

µÑÇàÅ×Í; Off by default “ĐăĂèãªé;ÒÃ«ÔŞâªAä¹«ìá¹ÇµÑéŞ

¹;ÇèO“ĐAOâ»ÃájAAál»¾⁄₄ĀÔàªªÑ¹ă´àĀŌĀ;ăªé

µÑÇàÅ×Í; On by default “Đăªé;ÒÃ«ÔŞâªAä¹«ìá¹ÇµÑéŞà»ç¹ªèÒ

“O¿ĬĀµì¹;ÇèQ“ĐAOâ»ÃájAAál»¾⁄₄ĀÔàªªÑ¹.OèăĂèµéÍŞ;ŌAăªéŞO¹“ÖŞ

“ĐăAO;ăªé;ÔA«ÔŞâªAä¹«ì¹Oé

ãĚé°Ñ¹.Öï;ÒÃµÑé§¤èÒà»ç¹ "ÃÛ»áº.Õè;ÓĚ¹´àÍ§"
àA×èÍ°Ñ¹.Öï;ÒÃµÑé§¤èÒãĀéÇ
AĐºº.Đ¹Ó¤èÒ¹Ñé¹ă»ă»ç¹ĀOĀ;ÒÃµèÍ.éÒĀĀÒĀ;ÒĀà´ÔÁ.ÕèĀŌÍĀÙè
ĚĀÑ§¨Ò;¤Ø³ă´é;ÒÃµÑé§¤èÒ.Õè´Õ.ÕèĚØ´ĚÓĚĀÑºáÍ»¾ĀÔà¤Ñ¹
OpenGLăĀéÇ
;ÔĀºÑ¹.Öï;ÒÃµÑé§¤èÒ¹Ñé¹ăĆé¨ĐªèÇĀăĚé¤Ø³ĚÒĀÒĀ;µÑé§¤èÒ¤Í¹¿Ô;
OpenGLăéĪèO§ĀÇ´àĀçÇ;èÍ¹.Ōè¨ĐàĀŌèĀăªéâ»Āá;ĀĀă
´ĀăĀèµèÍ§µÑé§¤èŌµÑÇăĀ×ĪµèO§æăĚĀè.Ø;¤ĀÑé§

ı̇ÒÃã^aéáŦ^oàĀ×èı̇^{1a}èÇÃãĚé^{ø³}»ÃÑ^oÇÒÁÊÇèÒ§ ¢ÇÒÁ¢Á^aÑ^{ı̇}
ÉA×ı̇^øèOáı̇AAO¢ı̇Sá^{a1}à¹ĀEO·ÖèàĀ×ı̇ı̇ä^{ı̇}é
ã^aéı̇ÒÃáı̇éä¢ĚÖà^{3/4}×èı̇»ÃÑ^oÇÒÁÊÇèÒ§·Öèáμı̇^øı̇Ñ¹ÃĐĚÇèÒ§ÃÛ»μ
é¹©^oN^oı̇N^oàı̇Oμı̇^{3/4}Øμ·ÖèáĚ^{ı̇}§^{o1}ı̇Ø»ı̇Ā³ı̇áĚ^{ı̇}§^{1/4}Ā
«ÖèSĀO»AĐáĀ^{a1}ı̇Ā×èı̇·O§O¹ı̇N^oâ»Āáı̇ĀĀ»AĐÁÇĀ^{1/4}ĀÃÛ»ĀQ^{3/4}
à^{3/4}×èı̇äĚéä^{ı̇}éĚO·ÖèŦı̇ı̇μéı̇S·ÖèĚØ^{ı̇} (à^aè¹ ĀÛ»ŦèOA) àĀ×èı̇áĚ^{ı̇}
§^{1/4}Ā^{o1}ı̇ı̇ı̇Ā^{3/4}ÖÇàμı̇Āı̇
¹ı̇ı̇^{ı̇}Öı̇¹Öé àı̇Ā 3D ĚĀOĀàı̇Ā^{ı̇}ĐÁŦı̇ÖÃáĚ^{ı̇}§^{1/4}Ā·Öè^{ı̇}èı̇¹¢éÒ§Á×^{ı̇}
ı̇OAà^{3/4}ÖèA^{ı̇}èO^{ı̇}ÇÒÁÊÇèO§áĀĐ/EA×ı̇^øèOáı̇AAOã^{a1}à¹ĀEO·ÑésĚÁ
Đ^aèÇĀãĚéAO^{3/4}ã¹àı̇ĀÊÇèO§¢Öé¹ ¢Ø³ÖSĚOĀOĀŦàĀè¹àı̇Āä^{ı̇}é Ö¢Öé¹

⌘Ø³ÊÒÁÒÃŦàÅ×í:á^{a1}à¹ÅÊÕä´éâÂã^aéáŦ^oàÅ×è¹
·NéŞANŞÊOAOAŦŦ»AN^oá^{a1}à¹ÅÊOáŞÊOàçOACËÃ×ÍÊÕ¹éÓàŞÔ¹ä´éâ
´ÅµAS EAXI»AN^o.NéŞ 3 á^{a1}à¹A^{3/4}AéIA æ iN¹içä é

Digital Vibrance

·QāEéꞆØ³EOAÖÃ¶C⁰ꞆØÁ;QÃáÂ;ÊÕáÅĐꞆÇÒÁàçéÁçÍŞÊÕă´éÁÒ;çÖé¹
«OèŞEèŞ¹/₄ÃăEéAO³/₄ă¹ál»³/₄AOăꞆ^aN¹.NéŞEÁ´AOEÖ·OèꞆA^aN´AOèŞçÖé¹

jÃ0¿áÊ´šªèÇšÊÕ àÊé¹âæéš¹Õé·ĐáÊ
·š¼ÄjOÄà»ÄOèA¹á»Äš·N¹·O·Oè²Ø³»ÃÑº²èÒ²ÇÒÁ²ÁªÑ´ ²ÇÒÁÊÇèÒš
EA×l²èOájAAO

j ÒÃàÅ×íjµÑÇàÅ×íj¹Õé`Đ: ÓãĚéÃĐ^{oo}ã^aéj ÒÃµÑé\$µèÒ·ÕèµØ³j ÓĚ¹
`äÇéç³Đ^oUµãµA×èlšâ`ÂlÑµâ¹ANµÔ

ĚÁÒÂàĚµØ:

EOjãµA×èlšµíÁ³/₄ÔÇàµíÃiçlšµØ³·Ó\$Ò¹ÎUèã¹à¹çµàÇÔÃij j ÒÃáĚ¹
`š¹/₄AEÖ`Đà»ÂOèA¹ă»Â\$EÂN\$`Öjă`éAçljl¹àçéOEUEçO¹ă
`ÇEiáĂéÇ

ÃÒÂ;ÒÃ;ÒÃµÑé§èÒ·ÕèØ³⁰Ñ¹.Ö;äÇé
ãÉéàÃ×Í;µNÇàÃ×Í;Ö;ÃÖÃ;ÖÃà³/₄×èlãÃÖÃ;ã^aé§Ò¹;ÒÃµÑé§èÒ·ÕèµéÍ§
iOA

⌘Ø³ÊÒÁÒÃ¶°Ñ¹.Ö;:ÒÃµÑé§⌘èÒÊÕ»Ñ´·Ø°Ñ¹äÇéà»ç¹ÃÙ»áº.Õè;ÓË¹
´àİä´é àA×el°N¹.Ö;:ÒÃµÑé§⌘èQáÁéÇ
ÃĐºº.Đ¹O⌘èÖ¹Né¹ä»à»ç¹AOÄ;OÄµel·éÒÂÃÒÂ;ÒÃà´ÔÁ.ÕèÁÕÍÂÙè

Å°ÃÒÂ;ÒÃ;ÒÃµÑé§¤èÒÊÕ·Õèä´éàÅ×Í;äÇé¨Ò;ÃÒÂ;ÒÃ

àÃÕÂ¡¢éíÁÙÅ¤èÒÊÕ¢í§¤èÒÎÒÃĩ´áÇÃì·ÕèµÑé§ÁÒ¨Ò¡âÃ§§Ò¹

ãªéàÅ×Í;âĒÁ´ä·ÁìÁÔèšŒÍŠ´ÍÀÒ¾

µÑÇàÅ×Í; Auto-Detect ãĒéÇÔ¹â´ÇÊìÃÑºèÒ·ŒèàĒÁÒĐĒÁ´Òì´ÍáĒ
s¼ÅàÍš «ŒèšµÑÇàÅ×Í;¹Œé·Đãªéã»ç¹èèŒ´Œ¿Íµì â»A
·AOºÇèŒ´IAO¾AØè¹à;èOºŒSAØè¹Œ´ãAèEOAOA¶ãªéèØ³ĒÁºÑµÔ¹Œ
éä´é

µÑÇàÅ×Í; General Timing Formula ĒÃ×Í **GTF**
à»ç¹µÑÇàÅ×Í;·ŒèAN;ãªé;NºŒŒAì´áÇÃìÃØè¹ãĒÁè æ

µÑÇàÅ×Í; Discrete Monitor Timings ĒÃ×Í **DMT**
à»ç¹AŒµAºO¹AØè¹à;èŒ·ŒèANšºšãªéã¹ŒŒAì´áÇÃìºŒš»ÃĐàÀ·
ãĒĒãªéšŒ¹µÑÇàÅ×Í;¹ŒéEO;ŒŒAì´áÇÃìŒÍšºØ³µéÍšãªéãĒÁ´ DMT

à¾ÔèÁäíí¹ NVidia QuickTweak äÇé·Õè·ÒÊ;ì°ÒÃìí§ÇÔ¹â´ÇÊì
äíí¹¹Õéãªé;ÓË¹´ÃÙ»áº Direct3D, OpenGL ËÃ×Í;ÒÃµÑé§ªèÒÊÕ
´éÇÂµ¹àì§ "ä´éíÂèOSAC´àAcC" "Ö;àA¹U»êl»lN»¹l;Ö;¹Öé
àA¹U¹ÖéAÑ§AQQA;QAEÖEÑªªªéªèO´ÖçlÀµiáAĐàAOÂ;ãªéä
lĐÄçl;ªØ³EAºNµO;OAáE´§¹¼A'

⌘Ø³ÊÒÁÒÃ¶àÅ×Í;äÍ⌘¹ÊÓËÃÑ°ãªéá.¹ÂÙ·ÔÅÔμÕ QuickTweak
¹.ÔÊìºÔÃì¢Ì§ÇÔ¹â ÇÊìä´é
àÅ×Í;äÍ⌘¹.ÕèμέÍ§;ÒÃάÊ´§¨Ò;ÃÒÂ;ÒÃ¨Ò;¹Ñé¹ ⌘ÅÔ; "μ;Å§" ÊÃ×Í
"μ;Å§ãªé" à¾×èÍÎ»à´μäÍ⌘¹¹.ÔÊìºÔÃì

àÅ×Íjâ»Ãá;ÃÁ`Ñ´;ÒÃà´Êjì·Í»¢Í\$ NVIDIA
â»Ãá;ÃÁ`Ñ´;ÒÃà´Êjì·Í»¢Í\$ NVIDIA
`Đ^aèÇÃãÉé;ÒÁ·ÔŜÔ¹ÁÔ»ÃĐÊÔ· ÔÀÔ^{3/4}ÁÔ;ÂÔè\$¢Öé¹ ÍÂèÔ\$à^aè¹
Îµ^µÔÀi;ÒÁ`Ñ´;ÔÃÔ¹â´Ç), ;ÒÁ;ÔÊ¹µÔáÉ¹è\$µÂ\$;ÃÔ\$ãÉé;Ñ^oã
ÍĐÀç; áÃĐ;ÔÃ«UÃ àA×èl^µØ³ã^aé;ÔÃ;ÔÊ¹
´gèÔ^µl¹;Ôà;làA^aN¹ãÉé;Ñ^oÉÃÔÃ`ÍÃÔ^{3/4}·â»Ãá;ÃÁ`Ñ´;ÒÃà
´Êjì·Í»`ĐÊ¹N^oÊ¹Ø¹;ÒÁ·ÔŜÔ¹¢Í\$à´Êjì·Í»ÉÃÔÃà´Êjì·Í»
à^{3/4}×èl^aèÇÃãÉé^µØ³`Ñ´;ÒÁ^{3/4}×é¹·Ôè·ÔŜÔ¹ã¹â»Ãá;ÃÁ`Ñ´;ÒÃà

à»Ô´ä´ÍĐĀčlĭ; ÒÃĭÓĚ¹´¤èÒ¤Í¹; ÔàĭÍàÃªÑ¹¢Íšâ»ÃáĭÃÁ¨Ñ´ĭ ÒÃà´Êĭ·Í»¢Íš
NVIDIA

ä´ÍĐĀčlĭ; ÒÃĭÓĚ¹´¤èÒ¤Í¹; ÔàĭÍàÃªÑ¹ã¹â»ÃáĭÃÁ¨Ñ´ĭ ÒÃà
´Êĭ·Í»Đ¤Çº¤ØĀ; ÑšĭĭªÑ¹áĀĐ¤èÒ·NéšĒĀ´ã¹â»ÃáĭÃÁ¨Ñ´ĭ ÒÃà´Êĭ·Í»
ÍĀeOšàªè¹ĭNÇàĀ×ĭĭ; ŌĀĭŌĚ¹´µŌáĒ¹èšĒU¹ĀĭĀQš¢Íšä
´ÍĐĀčlĭ; ŌĀàĀ×ĭĭĭµ¤ŌĀĭ áĀĐ¤èŌĭŌĀ¨Ñ´ĭŌĀâ»ÃáĭĀĀ

»Ô´ä´ÍĐĀçĭ;¹ÕéáĀĐ°Ñ¹.Öĭ;ÒÃà»ĀÕèĀ¹á»ĀšăCé
áµè;ŌĀà»ĀÕèĀ¹á»Āš·ĐĀŌ¹⁄₄ĀĒĀŅš·Ōĭ;²Ø³²ĀŌĭ "µĭĀš" ĒÃ×Í "µĭĀšăé"
ă¹ă´ÍĐĀçĭ; "²Ø³ĒĀ°ŅµŌà³⁄₄ŌèĀăµŌĀ"

ãĚé∅³;ÓĚ¹ÇèÒ¨Đãªé»ØèÁã
´ϕİšàAÒĚìàÃŎĀ;àA¹UàA×èİAŎ;ÒÃ∅ÅÔ;·Ŏèăİ∅¹¹¹.ÒĚ;ìºÒÃì

à»Ô´ËÃ×Í»Ô´¢éÍ¤ÇÒÁÂ×¹ÂÑ¹
·Óà¤Ã×èÍËÁÒÂ·ÕèµÑÇàÂ×Í;¹Õé·ËÒ;¤Ø³äÁèµéÍ;ÒÃãËéáÊ
´¢éÍ¤ÇÒÁÂ×¹ÂÑ¹·Ø;¤ÂÑé§·ÕèâÉÁ´¤Í¹¿Ôà;ÌàÂªÑ¹ 3D
“Ô;àÁ¹Û·ÔË;ìºÔÀì

àÅ×ÍµÑÇàÅ×Í¹Öé ËÖᵢ∅³µéÍ§ᵢÒÃáÊ´§¼ÅàÁ¹Ù·ÒÊᵢºÒÃì
´éÇAálççàççµì 3D

μÑÇàÅ×í;¹Öéãªé;ÓË¹´μÓáË¹è§;ÒÃáÊ´§ÀÒ¾¹´´Íá¹
âA×è;·ÖÖ¹·Öè²ÇÓÁÁĐàÍÖÁ´μèÖ;ÇèÖ²ÇÓÁÁĐàÍÖÂ´ÊÙ§ÊØ
´·ÖèÉÖÁÖÁ¶ãªéã´é

ã^aé»ØèÁÅÙ;ÈÃà¾×èÍ»ÃÑ^oμÓáË¹è§¢Í§¾×é¹.Õèà´Êì·Í»^{o1}·´ÍáÊ´§¾Å

ÃŒà«çµðèÒà Êì·Í»à¾×èÍã^aé'Œ¿ÍÅµìŒÍ§ðèÒðÇÒÁÅĐàÍŒÂ
´áÅĐÍÑµÅŒıŒAAŒà¿A^a»N'°N¹

uÑÇàÅ×Í:àËÅèÒ¹Öéãªé;ÓË¹´»ÃĐàÀ·¢Í§ÍØ»jÃ³ìáÊ´§¼₄Å (´ÍÀÒ¾ ´´Íá¹
ÉÅ×ìâ·Ã·NE¹ìâ´A¢Öé¹íAUè;NºíØ»jA³ì·Öè;OÄì´´ÍE¹NºE¹Ø¹)

à»Ô´Ë¹éÒµèÒ§à³/₄×èÍµÑé§¤èÒµèÒ§ æ ¢Í§ÍØ»¡Ã³íaÊ
¸¹/₄Å·Öèã^aé§O¹IAUè

ÃĐ°ØÃÙ»»á°°áÅĐ»»ÃĐà·È·Õèãªé;ÒÃáÊ´§¼Å·Ò§â·Ã·ÑÈ¹ì

à»Ô´Ë¹éÒµèÒ§à¾×èÍÃĐ°ØÃÙ»áº;ÒÃáÊ´§¼Å·Ò§â·Ã·ÑÈ¹ì

ÃÒÂ;ÒÃ¹ÕéãéàÅ×Í;ÃÙ»áº;ÒÃáÊ
´§¼Ä·Ôšâ·Ä·ÑÉ¹ιμÔÃ»ÃĐà·È·Õè∅³ÍÂÙèÍÒÈÑÂ
ĚÁÒÂaĚμ∅: ĚÒ;»ÃĐà·È·Õè∅³ÍÂÙèäÁè»ÃÒ;ĴÂÙèã¹ÃÒÂ;ÒÃ
ãĚéaÅ×Í;»ÃĐà·È·ÕèÍÂÙèã;Áé»ÃĐà·È·Õè∅³ÍÂÙèÃÔ;·ÕèĚ∅´

ıÓĚ¹ ăĚéĂÛ»á^{oo}.ŌèàĀ×Íjà»ç¹ĂÛ»á^{oo}.Ōèă^aéàĀ×èÍà»Ô´àĀ×èÍſ
àĀ×èÍà»Ô´àĀ×èÍſıÍĀ³/₄ÔÇàμÍĀì.Ōèà^a×èÍĀμèÍâ.Ă.ŊĚ¹àçéÒıŊ^oıÒĂìııı
μŊÇàĀ×Íı¹Ōé^aèÇĂăĚéĀŊĚ¹ăăéÇèŌçéııÇŌĀ.ŊéſĒĀ´.ŌèáĒ
ſ^{o1}ıĀŌ³/₄ĂĐĚÇèŌſıĂĐ^oç¹ıŌĀ^oŮμĐ»ĀŌı^{o1}ıâ.Ā.ŊĚ¹ıĀèŌſıŮıμéÍſ

ã^aé;ÓË^{1'}_{a1}Ô´çİŞÊÑÒ³àÍÒµì³/₄Øµ·ÕèÊè§¹/₄èÒ¹ä»ÂÑşâ·Ã·ÑÈ¹ì
ËÒ;⌘Ø³ă´éà^a×èÍÁµèÍá·Âă^aéÊÒÂà⌘à^oÔÂ·ÕèŦÙ;µéİş^{a1}Ô´ÊÑÒ³á^{oo} S-
Video out·ĐăÊé⌘Ø³AO³/₄ÊUş;ÇèÖÊÑÒ³á^{oo} Composite video out
ËÒ;⌘Ø³ăAèá¹èă´à;ÖèAÇ;N^{oa1}Ô´çİŞÊÑÒ³ăÊéàÂ×Í; **Auto-select**

ã^aé»ØèÁÀÙ;ÈÃ»ÃÑ°μÓáĚ¹èšà´Ê;ì·Í»^{o1}·Íâ·Ã·ÑÈ¹;

ĚÁÒÂàĚμØ:

ĚÒ;ÀÒ^{3/4}ã¹â·Ã·ÑÈ¹;ĀéÁĚÃ×ĭăÁèÁŎÀÒ^{3/4}à¹×èÍš·Ò;ĭ;ÒÃ»ÃÑ°μÑés
ãĚéĀĭ»AĐAO³ 10 ÇO¹Ŏ·Ŏ ÀŎ^{3/4}·Đ;ĀN°AOáĚ
·š^{1/4}·Ā·ŎèμOáĚ¹èš·Ŏèà»ç¹·Ŏ;ĭĀμĭă·ĀNμâ¹ĀNμŎ
··Ŏ;ĭ¹Né¹μØ³ĀNšĚOAOĀĭăĀŎèĀ·Ŏ;ŎĀ»ĀN°μNésμèÒãĚÁéĭŎ;μĀÑ
ésĚĀNš·Ŏ;ĭ;ŎĚ¹·μOáĚ¹èšçĭšà´Ê;ì·Í»áĀéÇ μØ³μéÍšμĀŎ;Ŏè»ØèA
"μĭĀš" ĒA×ĭ "μĭĀšã^aé" à^{3/4}×èĭ^oN¹·Ŏ;μèOAOĀã¹ăÇĀŎ 10 ÇO¹Ŏ·Ŏ

ÃŒà«çµà´Êì·Í»ä»ÂÑ§µÓáË¹è§´Œ¿ÍẢµìº¹â·Ã·ÑÈ¹ìâ´Âãªé¤ÇÒÁẢĐàíŒÂ
´»N´´´´Œ¹

ã^aéµÑC⌘C^o⌘ØÁàËÀèÒ¹Õéã¹¡ÒÃ»ÃÑ^o⌘ÇÒÁÊÇèÒ§áÅĐ⌘ÇÒÁÍÔèÁµÑÇ¢
Í§EO¢Í§AÖ¾ã¹â·A·NE¹ì

ãªéµÑÇ¤Çº¤ØÁàËÀèÒ¹Õéã¹;ÒÃ»ÃÑº¤ÇÒÁÊÇèÒ§áÅĐ¤ÇÒÁ¤ÁªÑ
´ϕISO¾¼ã¹â·A·NE¹ì

ã^aéµÑÇᵂC^oᵂØÁ¹Õéà¾×èÍ»ÃÑ^o¿ÔÅàµÍÃìÅ
´iOAÊÑè¹¢ÍSAO¾·OèµéÍ§iÔÃã^aéiN^oâ·A·NÈ¹i
¢Íá¹Đ¹ÓãËéᵂØ³»Ô´¿ÔÅàµÍÃìÅ´jÒÃÊÑè¹¢ÍSAÒ¾àÁ×èÍàÅè¹ÀÒ¾Â¹µÃì
DVD ¨Oj|Ø»iA³i¶I´ÃÊÑÈ¢Í§IOAÍ´áÇAi

jÓË¹ ¢ÇÒÁÂĐàİÕÂ´ ¢İ§´İáÊ´ §¼¼ÁáÂĐÃĐ´ Ñ°ÊÕă¹; ÒÃáÊ
§¼¼Â·Õ§´İâ·Â·ÑÊ¹İ

ã^aéµÑÇ¤Ç^o¤ØÁàËÀèÒ¹Õéã¹¡ÒÃ»ÃÑ^o¤Ø³ÀÒ³/₄¢ÍŜÊÑÒ³ÇÔ´ÕâÍËÃ×Í
DVD ^{o1}·ÍÀÖ³/₄

¤Ø³ÊÒÁÒÃ¡¤Ç^o¤ØÁ¤èÒ¤ÇÒÁÊÇèÒ§ ¤ÇÒÁ¤Á^aÑ´
¤èÒ¤ÇÒÁ¡ÒèÀµÑÇ¢ÍŜÊÒã³/₄×è¡¤Ø³ÀÒ³/₄¡ÒÁáÊ´§¹/₄Â·Õè
´ÒàA×èlàÀè¹ÀÒ³/₄Ã¹µÀì DVD ã¹à¤A×è¡§¤À³/₄ÒÇàµ¡Àì

⌘Ø³ÊÒÁÒÃ¶»ÃÑº⌘ÇÒÁ¶ÕèÊÑÒ³¹ÒìÔ¿ÒËÃÑ¿áÅĐÊÑ-
Ö³¹ÖìÔ¿Ö¿İŞĖ¹èÇÃ¿ÇÔÁ·Ö¿İŞâ»Ãà«Ėà«ĬÃì¿AO¿Ö¿¿İŞ NVidia ä´é

μÑέξϣèÒϣÇÒÁàÃçÇϕÍŜÊÑ-
O³¹OÍÔıOĖĖNıϕÍŜă»Ăà«Ėà«ÍĂı;ĂÔ¿Ôı NVidia

ÃĐ°ØƙÇÒÁàÃçÇÊÑÒ³¹ÒÌÔ;ÒËẢÑ;à»ç¹àÁ;ĐàÎÔÃµ«ì

jÓË¹ ¢ÇÒÁàÃçÇÊÑÒ³¹ÒìÔ;Ò¢Í§ÍÔ¹àµÍÃìà¿«Ë¹èÇÂ¢ÇÒÁ¨Ó¹;ÒÃĩ´áÊ
§¹¼Å

ÃĐ°Ø¤ÇÒÁàÃçÇÊÑ-
Ö³¹ÖİÖıÖ¢İ§İÖ¹âıİÀìàç«Ë¹èÇÂ¤ÇÒÁ´´Óà»ç¹àÁıĐàİÔÃµ«ì

.´Êí°¤ÇÒÁàÃçÇÊÑÒ³¹ÒìÔ;ÒãËÁèà^{3/4}×èí.

´Êí°àÊ¶ÒÁÁÁÒ^{3/4}¢Í\$ÃĐ⁰⁰íêí¹ã^aé\$Ò¹´´ÁÔ\$

ËÁÒÂàËμØ: ¤Ø³μéí\$´Êí°;ÒÃμÑé\$¤èÒãËÁè«Öè\$äÁèã^aè¤èÒ
´Ö¿ÍÁμì¢Í\$^{1/4}Ué^{1/4}ÃÔμ;êí¹.Öè´´Đã^aé¤èÒ¹Ñé¹μÁí´ã»

¡;OÀàÀ×¡µÑÇàÀ×¡¹QéªèÇÃãÉéÁÑè¹ãªª´éÇèÒ
¡;OÀà»ÀÒèÁ¹µÇOÀ¡QèEÑO³¹O!O¡OªĐAO¹¼ÀãªesÒ¹ã
ÁINµâ¹ANµO·Ø¡µANés·OèàÀÒèÁãªesO¹ÇO¹ãÇÈì
ÈÁÒÀãÈµØ: µØ³ÈÒÁÒÃ¡QéÒÁÇÑé¹µ¡¹¡;OÀµÑésÊÑ-
O³¹O!O¡O¡O¡Ñµâ¹ANµO·Qè·OŠO¹Ç³ĐàÀÒèÁµé¹ÁĐªªªª´éªª
ªÁ¡OÀ¡µOÀì <Ctrl> µéOŠàCéÇ³Đ·OèCÒ¹ãÇÈì¡OÁÑSàÀÒèÁ·ÓŠÒ¹
ÉO¡àµA×èìSµ¡A¾¼QÇàulA¡àª×èlAµèl!AÙè¹Nª¹cµàCOA¡¡ãÉé¡µOÀ
ì <Ctrl> µéOŠàÇé·N¹·O EÁÑSªO¡ª´éÁÇl¡l¹àªéOÈUèÇO¹ãÇÈì

ÃÕà«çµÊÑÒ³¹ÒìÔ;Ò·ÑésËÁ´ áÅéÇãËéÃĐ^{oo}µÃÇ·ÊÍ°îÒÃì
´áÇÀì;ÃÔ¿Ô;ìèì¹·Ôè·Đã^aéŞÔ¹µNÇ^đÇ^oµØA·Ôè;ÔË¹´äÇéÍÔ;µÃÑés
¢Íá¹Đ¹ÓãËéµØ³ÃÕà«çµ·Ø;µÃÑés·Ôèá¿Å^a BIOS ¢ÍŞ;ÔÃì´´Í â
´Aã^aéä¿ÃìÔAàA·EOEÃN°ÍN»à´µ BIOS

⌘Ø³ÊÒÁÒÃ¶àÅ×Í;âĚÁ´ TwinView ä´é¨Ò; 4 âĚÁ´´Ñšµèlä»¹Ŏé

Standard – âĚÁ´; ÒÃáĚ´ §¼ÅáººÁÒµÃºÒ¹ã¹Ě¹éÒ¨là´ŎÂÇ

⌘Ø³ÊÒÁÒÃ¶ãªéâĚÁ´¹Ŏéã¹; Å³Ŏ·ŎèÁŎÍØ»Í; Å³Í; ŎÃáĚ´
´§¼Å·Ŏèµèl; Nº; ŎÃÍ¨Í Nvidia à¾ŎÃšÍÁèŎšà´ŎÂÇ

Clone –âĚÁ´¹Ŏé¨Đ·ŎãĚé¨làĚ´ §¼ÅÃÍšáĚ´ §¼ÅµÒÁĚ¹éÒ¨ÍĚÅÑ;

Horizontal Span – âĚÁ´¹Ŏéãªéã¹; ÒÃŦÂÒÂà´Ěì·Í»ŦÍšÇŎ¹â

´ĈĚiä»ANš¨làĚ´ §¼Å 2 Ě¹éŎ¨là¹á¹Ĉ¹Íá´éã¹âĚÁ´¹Ŏé¨làĚ´
´§¼Å·NéšĚÍš¨Đªª×èlAµèl; N¹à»ç¹³¼×é¹·Ŏè; ŎÃáĚ´ §¼ÅŦ¹Ŏ´ãĚ-
èà¾¼ŎÃš¨là´ŎÂÇ

Vertical Span – âĚÁ´¹Ŏéãªéã¹; ÒÃŦÂÒÂà´Ěì·Í»ŦÍšÇŎ¹â

´ĈĚiä»ANš¨làĚ´ §¼Å 2 Ě¹éŎ¨là¹á¹ĈµNéšª´éã¹âĚÁ´¹Ŏé¨làĚ´
´§¼Å·NéšĚÍš¨Đªª×èlAµèl; N¹à»ç¹³¼×é¹·Ŏè; ŎÃáĚ´ §¼ÅŦ¹Ŏ´ãĚ-
èà¾¼ŎÃš¨là´ŎÂÇ

TwinView Standard - àÅ×Í;âËÁ;ÒÃáÊ´§¼Å°ÁÒµÃ°Ò¹ã¹Ë¹éÒ´ía´ÕÂÇ
¤Ø³EOAOA¶|ãªéâEA´¹Oéã¹;A³O·OèAOÍØ»|A³;|OAáÊ´§¼Å·Oèµè|;N°;OAì
´´I Nvidia à¾OA§IAèO§à´OAÇ

TwinView Clone - âĖĖ'1ŒĖĖĐ.ÓăĖĖ'íaĖ'š¼ĂĖÍśăĖ'š¼ĂμOĂĖ'ėŒ'İĖĖNĭ

TwinView Horizontal Span - âĖÁ´¹Œë¨Đ·ÓăĖĖÊÔÁÒĂªáĖ´š¼Ả
 Ėĭj·l»¢ł\$CO¹â ĆEI¹⁰¹ĺáĖ´š¼Ả 2 Ė¹éO¨łuēłN¹ā¹á¹C¹łā ē ā¹ăĖA´¹Œé ¨ĺáĖ
 ´š¼Ả·NešĖIš¨ĐāˣxēłAμēłN¹à»¢ł³¼×é¹.OēłOAăĖ´š¼Ả¢¹Œō āĖ-
 èā¾ŒAš¨ĺā ŌAÇ«Ōēs ĐāēÇAăĖĖ UAO¾ā ēłĆēŌšŒŒéłĭÇēŌłŌă
 ŪŌłĺĺā ŌAÇ

TwinView Vertical Span - âĖÁ¹ŎéĎ.ÓăĖĖĖĖÒÁÒĂŧăĖŧ¹/₄Ăà
Ėĭ.ĭ»ċİŞCŎ¹ăĈĖĭ⁰¹ŧăĖŧ¹/₄Ă 2 Ė¹éOĭµĖĭN¹ă¹ă¹ĈµNéŞă éă¹ăĖĖÁ¹Ŏé
ŧăĖŧ¹/₄Ă.NéŞĖĖŞĖĐà^a×ĖĭAµĖĭN¹ă»ċ¹³/₄×é¹.ŎĖĭOĂăĖŧ¹/₄Ăċ¹OăĖ-
Ėà³/₄OĂŞŧăŖOĂĈ«ŎĖŞĖĐ^aĖĈĂăĖĖŧăŖOĂ³/₄ă éĭĈéOŞċŎĖ¹ĭĈĖOĭOA
ŧăŖOĭŧăŖOĂĈ

ÀÒ¾¼¡ÃÒ¿Ô¡µÒÁ¤èÒ¤Í¹¿Ôà¡làÃªÑ¹¢Í§¡ÒÃáÊ´§¹¼Åª¹âËÁ´ TwinView
¡ÒÃ¤ÅÔ¡ÀÒ¾¼¡ÃÒ¿Ô¡¹¹´´ÍÀÒ¾¼´´Ðà»¿¡ÒÃà×Í¡ãËé´´ÍáÊ´§¹¼Å¹Ñé¹à»¿´´ÍáÊ
´§¹¼Å»Ñ´´ØºÑ¹¢Í§¤Ø³àÁ×èÍ¤Ø³¤ÅÔ¡¢ÇÒº¹ÅÒ¾¼¡ÅÒ¿Ô¡·Òè´´ÍÅÒ¾¼
¤Ø³´ÐàË¹ÅÔÂ¡ÔÃµèÔ§æ
·Òè¤Ø³ËÔÀÔÂ´´»ÅÑºà»ÅÒèÂ¹ãËé¡ÑºÍØ»¡Ã³¡ÒÃáÊ
´§¹¼Å·Òèà¡ÒèÀÇ¢éÍ§¡Ñ¹

ËÒjã^aéâËÁ´ Clone ¢Ø³´ ÐÊÒÁÒÃŦjÓË¹´jÒÃáÊ
´s^{1/4}Ãã¹Ê¹éO´ÍÊÂNjãÊéAÖ¢èO¢COAÃÐàIOA´¢Ísà
´Êjì·l»AOjìCèOã¹Ê¹éO´ÍAÍs ÊOjìèO¢COAÃÐàIOA´¢Ís´ÍáÊ
´s^{1/4}ÃAÍs¹éIÄjCèO¢COAÃÐàIOA´¢Ís´ÍáÊ´s^{1/4}ÃÊÂNj·à´Êjì·l»¢Ís´ÍáÊ
´s^{1/4}ÃAÍs´Ðá^{3/4}¹àÍsâ´ÁINµâ¹ANµOàA×èl¢Ø³ãA×èl¹àAOËIä»ÊØ¢Í⁰´I

Â;àÀÔ;î ÒÃã^aé^ø³ÊÁ°ÑµÔ;ÒÃã^¾â´ÁÍÑµâ¹ÁÑµÔã¹´´ÍáÊ´§^¼ÃÁ§ ËÒ;ä
´éàÀ×Í;µÑCàÀ×Í; "ã^aéà´Ê;ì·Í»àÊÀ×Í¹´AÔ§;N°´ÍáÊ´§^¼ÃÁ§ã´é" àCé
«Òès´Ð·ÓãÊéà´Ê;ì·Í» "ÊAØ´;ÒÃ·Ó§O¹" ã¹µÓáÊ¹èšã´µÓáÊ¹èšÊ¹Òès
ø³ÊÁ°ÑµÔ¹ÒéàÊAÔÐÊOÊÁN°;ÒÃ¹ÒàÊ¹Í§O¹ã¹áÍ»^¾ÀOà^øN¹·Òéã^aé^øÇ
ÒAÁÐàÍÒÃ´ã¹;ÒAáÊ´§^¼ÀEU§

jÒÃã^aé§Ò¹¤Ø³ÊÁ^ºÑµÔ¹Õé¨ĐÂçí¤µÓáĚ¹è§jÒÃá^{¾1}»Ñ¨¨Ø^ºÑ¹çí§¨íaÊ
§^{¼1}Ā·ŌèàĀ×lĵăCéã¹¢³Đ¹Ōé «Ōè§Đ·ŌãĚèàĚjĭ·l» "ĒĀØ'jŌĀ·Ō§Ō¹"
ã¹µŌáĚ¹è§ã'µŌăĚ¹è§Ē¹Ōè§
¤Ø³ÊÁ^ºÑµÔ¹ŌèàĒĀŌĐĒŌĒĀÑ^ºjŌĀ¹ŌàĒ¹í§Ō¹ã¹áí»^{¾1}ĀŌà¤Ñ¹·Ōèã^aé¤Ç
ŌĀĀĐàlŌĀ'ã¹jŌĀáĒ'§^{¼1}ĀĒU§

ã^aé§Ò¹∅³ÊÁ⁰ÑμÔϕÍ§à´Êì·Í»àÊÁ×Í¹··ÃÔ§ã¹âËÁ´ìÒÃϕÂÔÂÀÒ³/₄ϕÍ§
TwinView
ìÒÃã^aé§Ò¹∅³ÊÁ⁰ÑμÔ¹Õé¹·Đ·ÓãËé∅³μÑé§∅èÒà´Êì·Í»ãËéÁÕϕ¹Ò´ãË-
èìÇèÒ´ÍáÉ´§¹/₄··Ôèà^a×èìÁàϕéÓ´éÇÂìÑ¹
ÇÔÇ·Ôèà^a×èìÁμèìàϕéÒ´éÇÂìÑ¹··Đ»ÃÒì·ãËéàËç¹μÁ¹·³/₄×é¹·Ôèà
·Êì·Í»·ÔèãËèçÔé¹ àA×èì∅³/₄··ÔÔÔÔAaA×èì¹àAÔËììì··Ôì³/₄×é¹·Ôè·ÔèáÊ
§

ÀÒ¾¼¿ÃÒ¿Ô¿µÒÁ¤èÒ¤Í¹¿Ôà¿làÃªÑ¹¢Í§¿ÒÃáÊ´§¼¼ÅÃÍ§ã¹âËÁ´ TwinView
¿ÒÃ¤ÅÔ¿·Õè¿ÃÒ¿Ô¿·Ð·ÓãËé¤Ø³ÊÒÁÒÃ¶µÑé§¤èÒÍØ»¿Ã³¿¿ÒÃáÊ
§¼¼Å«Ôe§µè¿¿Nº¿láÊ´§¼¼ÅÃÍ§·Ôèãªé¿ÔÀ¿·Í·ÔèáÊ´§¼¼Åªºº TwinView ä´é
ã¹¢³Ð·Ô§Ô¹¿ÀÙèâËÁ´ Clone

jÓĚ¹
ã^aé;ÒÃꞤC^oꞤØÁ;ÒÃ«ÙÁà³/₄×èíãĚéÊÒÁÒÃ¶«ÙÁàꞤéÒă»ÂÑŒĚ¹éÒ`Í;ÒÃá
Ě`Œ¹/₄Ā·ŒěméłŒ;ŒĀă´é

ã¹âĖÁ¹Ōé ¢Ø³ÊÒÁÒÃ¶àĀ×Ĵ;¾×é¹.ŌèĖ¹éÒ¹ĴÊèÇ¹.ŌèµéÍ§ĴÒÃ«ÙÁ
ĖĀNŠ¹ÒĴàĀ×ĴĴáĀéÇ ¢Ø³ÊÒÁÒÃ¶«ÙĀă»·ŌèĖ¹éŌ¹ĴÊèÇ¹¹Né¹ă¹é·N¹.Ō â
ĴĀĀ×èĴ¹µNÇĀĀ×èĴ¹éŌ¹ĀèŌ§

ãËéøø³ÊÒÁÒÃŋàÅ×Í; ÒÃ«ÙÁà¢éÒËÃ×ÍÍ;ã¹ÊèÇ¹¢ÍË¹éÒ´íaÊ
ŝ¼Å·ÕèàÅ×IjäÇé

àÅ×Í;ÍØ»;Ã³;ÒÃáÊ´§¼ÅÊÓËÃÑº;ÒÃáÊ´§ÀÒ¾ã¹âËÁ´;ÒÃáÊ´
§¼ÃáººàµçÅÊ¹éÖ·Í

ø³ÊÒÁÒÃŕàÅ×íĵÊÑ´ÊèÇ¹çÍ\$ÀÒ¾¼ (ç¹Ò´ã¹á¹Ç¹í¹µèíá¹ÇµÑés)
ÊÖÊÃÑºĵOÁáÊ´\$¼ÁáººàµçÆ¹éO´Í

jÒÃã^aéşÒ¹µÑCàÅ×Íj¹Õé`Đ·ÓãĚéä´ÃàCÍÃìjÒÃáÊ´ş^{1/4}ÂÊÒÁÒÃ¶jÓĚ¹
æèOꞤÇÓÁĀĐǎlŌÁ´·ŌèàĒÁŌĐĒA;N⁰jŌAáÊ´ş^{1/4}Āá⁰⁰ăµçĀĒ¹éÔlă´é

ıÖÃã^aéşÖ¹μÑÇàÅ×Íı¹Öé˘Đà»ç¹ıÖÃà^a×èÍÁâÂşıÖÃ^ıÇ^{0ı}ØÁıÖÃ«ÙÁã¹Ë¹é
ÖıÖÃ^ıÇ^{0ı}ØAâlàÇÍÀàÁÀııN^{0ı}ıÖÃ^ıÇ^{0ı}ØAıÖA«UÁã¹ıÖAáË
˘s^{1/4}Áá⁰⁰ãμçAE¹éO˘lăéã¹¢³ĐàÖAÇıN¹

jÒÃ¸ÅÔi.Õè»ØèÁ¹Õé¨Đ·ÓãĚéãªésÒ¹¸Ø³ÊÁºÑμÔj:ÒÃáÊ´§¼Å¢Ñé¹ÊÙ\$â
ĤÃªéâĚÁ´ TwinView Clone â»A´ĚN\$àμÇèOμéł\$ãªésO¹âĚÁ´ Clone
ÍAUè¨Œ\$¨Đà¢éOãªé¸Ø³EAºNμOàĚÀèO¹Œéãªé

jÒÃã^{aé}šÒ¹µŃÇàĀ×Í;¹Ŏé^{ˆˆ}Đà»ç¹iÒÃjÓĚ¹
ãĚé«l;µiáÇĀiālàÇĀiàĀĀiàĀŎĀ;ã^{aé°}ŃĒÁŎĚàµíĀiĀŎš
ăĀèá¹Đ¹ŎãĚéçØ³ăĀ×l;µŃÇàĀ×Í;¹Ŏé à^{3/4}ĀŎĐ^{ˆˆ}Đ·ŎãĚéà;Ô´»Ń-
EQã¹jŎĀãĚ šĀŎ^{3/4°1}j ā^{aé1}āĚ
ˆšĀŎ^{3/4}ăĀè¶UjµéłšĚĀ×lăĀèĀŎĀŎ^{3/4}»ĀŎj^ˆčŎé¹ăĀĀ

áÊ´§ª¹Ô´¢Í§¨ÍÀÒ¾·Õè¤Ø³;ÓÃÑ§ãªé;Ñº;ÒÃì¨Í·ÕèàÅ×Í;äÇé

▯ÅÔ;à¾×èÍáÊ´§▯Ø³ÊÁ°ÑμÔϕÍ§ä´ÃàÇÍÃìáÅĐÍØ»;ĩ³ĩÊÓËÃÑ°·ÍÀÒ¾¹Õé

áÊ´§ÍÑµÃÒ;ÒÃÃÕà;Ãª·ÑéŞĚÁ´·Õèãªéä´é;Ñº·ÍÀÒ¾¹Õé
ÍÑµAO;OAAQà;Aª·ÕèÁOꞤCOA¶OèEUS¢Oé¹·ĐẢ
ÍÑµAO;OAENE¹¢İSAO¾¹E¹éO·İ

ÃĐ°ØÇèÒÃÒÂ;ÒÃã¹ ¢ÇÒÁ¶Õèã¹;ÒÃÃÕà;Ãª ¨ĐÃÇÁâĚÁ
´·Qè¨İAO¾¹OéãAèã´éĚ¹NºE¹Ø¹İAUèĚA×İăAè ;QAàÃ×İ;âĚÁ
´·QèãAèàĚAOĐĚA;Nº¨İAO¾¹ÇİS¢Ø³İº·OãĚé;O´»N-
ĚOAéOAáAŞã¹;OAáE´S¼ĚáAĐİO¨·OãĚéİOAİ´áÇAİÇİS¢Ø³àĚÕÂĚÒÂ

μÑÇàÅ×Í;¹Õé;ÓĚ¹`ãĚéä´ÃàÇÍÃ OpenGL ãªéºÑ¿à¿ÍÃ;ÒÃáĚ´§ÀÒ¾ 3
ÁÔμÔáº 16 °Ôμâ´ÂäÁèªÓ¹Õ§¶Ö§ÃÙ»áººÇÍ§¾Ô;à«Å·ÕèáÍ»¾ÅÔàªÑ¹ä
´éàÅ×Í;äÇé

μÑÇàÅ×Í;¹Õé`ĐªèÇÂà¾ÔèÁ»ÃĐĚÔ·,ÔÀÒ¾ÇÍ§;ÒÃ·Ó§Ò¹áÅĐ;ÒÃÅºÇéÍ
ÅUÃã¹ºÑ¿à¿ÍÃ;ÒÃáĚ´§ÀÒ¾ 3
ÅÔμÔ·ÕéÅÔªÇÔÃ¶U;μéÍ§ã¹;ÔÃà;çºÇéÍÁÙÅ¹éÍÃ

àÁ×èí;ÓË¹ãªé§Ò¹μÑÇàÀ×Í;¹ÕéáÅéÇ OpenGL ¨Đãªé¤Ø³ÊÁºÑμÔ
Advanced Multi-Monitor ¢Í§ Windows2000

␣Ø³ÊÒÁÒÃŋãªéµÑÇàÅ×Ĳ¹Ŧéã¹;ÒÃàÅ×Ĳ;ÇèÒ·ĐãĚé·ÍáÊ´§¼Åã´áÊ´sà
´ĚĲ·Ĳ»ã¹AØA⁰¹«éOÃĚQè§·ŦèàĚç¹ă´éªN´·ŦèÊØ
´ã¹;ŦAàÅ×Ĳ;µÑÇàÅ×Ĳ¹Ŧé;ç␣×Ĳ;ŦAãĚ
´§¼A·Đà»AŦèA¹µOáE¹è§ŦİSAO¾ã¹E¹éÒ·Í

ã¹¢³Ð¹Õé ãĚéáĚ´š´íáĚ´š¼Å¢íš TwinView :ÑéšĚÁ´
ĚŌ;µØ³µèlØ»;Ā³iäÇéAO;ÇèOE¹OèšIAèŌšáĀÐµØ³ă éà»ĀŌèĀ¹âĚÁ
ĵŌĀáĚ´š¼Āà»ç¹âĚÁ´ăĵµŌĀ·ŌèăAeăªèâĚÁ´ Standard
µØ³µélsăĀ×lĵÇèŌ´ĐáĚ´š¼Ā·Ōè´lă´
¹ĵ;Ō;¹Ōé
µØ³ĀÑšĚŌĀŌĀŋµĀŌĵ;ĀŌ;Ōĵ·Ōè»ĀŌ;ŋ¹ĵĀŌ¾ă¹µÑŌµŌµØ³éŌ¹Ō¹ă
´éâ´ĀµĀšă¾×èlăĀ×lĵăĚéáĚ´š¼Āă¹´Ī·ŌèáĚ´šĪĀUèă¹¢³Ð¹Ōé

ꞡÅÔ¡»ØèÁ¹Õéà¾×èÍµÑé\$ꞡèÒËÃ×ía»ÅÕèÂ¹¡ÒÃµÑé\$ꞡèÒ¢Í\$ÍØ»¡Ã³¡¡ÒÃ
áÉ´\$¼Å«Òè\$ãªé¡Ñº·ÍáÉ´\$¼Å»Ñ···ØºN¹

j ÒÃ Ç ¢ Ø Á ; ÒÃ á ³/₄ ¹ã^aé ; Ó Ë ¹¢ ¹Ò ¢ Í § ³/₄ × é¹ . Õ è Ë ¹é Ò ¨ Í . Õ è ¨ Ð Ê Ò Á Ò Ã ¶ ´ Ù ä
éã Ê é Ê Ñ Á ³/₄ Ñ¹ ì ; Ñ ⁰³/₄ × é¹ . Õ è à ´ Ê ì · Í » ¨ Á Ò § . Õ è Á Ò Í Á Ù è
« Õ è § ¨ Ð ã^a éã¹ ; Ò Á á Ê ´ § ¹/₄ Å à ´ Ê ì · Í » « Õ è § Á Ò ¢ ¹Ò ´ ã Ê è ; Ç è Ò » ; µ Ô · Õ è á Ê ´ § ä
´ éã¹ ¨ Í Á Ò ³/₄ ¨ Í á⁰¹ Ê Á × Í ´ Í · Õ Ç Ò

▯ÅÔ;à³/₄×èíμÃÇ¨Êí°¨ÍáÊ´S¹/₄Å·ÑésĚÁ´·ÕèμèÍà^a×èÍÁà¢éÒ;Ñ°;ÒÃì¨Í
ãĚéã^aé▯Ø³ĚA°ÑμO¹QéEO;▯Ø³àEOÂ°»ÅNê;à¢éO;N°¨ÍáĚ
´S¹/₄ĀĒĀN§¨O;·Oèà»O´▯l¹â·ĀĀ³/₄Oà¹Ā¢Oé¹ĀOáĀéÇ

.ÓàᵂÃ×èİŚĖÁÒÂ.Õèªèİ§¹Õé
ĖÖ;ᵂØ³àª×èİµèİ'İÄÖ¾à¢éÖ;Ñªèİ§àĖÕÂª'ÍáĖ'§¼ÅÃİ§«Õè§äÁèä
´éµÄC'ĖİªİÄUēã¹¢³Đ¹Õé
İQA.Öàªè¹¹Õé'Đà»¢¹»ÄĐâÂª¹µèİ'İÄÖ¾ÄØè¹à;èÒ
ĖÄ×İ'İÄÖ¾.Õèªª×èİµèİ;Ñªèİ§àĖÕÂª BNC

⌘ÅÔ;à³/₄×èlàϕéÒ´ÙϕείÁÙÅ·Õèà;ÕèÂÇϕεί§;ÑºÍĐά´»àμíÃì;ÒÃì´´ÍϕÍS
NVIDIA

⌘ÅÔ;à¾×èíà¢éÒãªé⌘Ø³ÊÁºÑμÔà¾ÔèÁàμÔÁ¢Í§;ÒÃŸ´´Í¢Í§ NVIDIA

⌘ÅÔ;à¾×èíà¢éÒ´Ù¢éÍÁÙÅáÅĐă´ÃàÇÍÃìÃØè¹ÅèÒÊØ´¢Í§;ÒÃì
´´Í·Ôèà»ç¹¢Í§ NVIDIA ã¹àÇçºă«μì¢Í§ ÑVIDIA

ϕέíÀÙÅ¹Õé¨ĐãĚéÃÒÂÅĐàíÕÂ´à;ÕèÂÇ;Ñ°íÒÃĩ´áÇÃìϕí§;ÒÃì
¨í·ÕèàÅ×í;äÇéã¹ϕ³Đ¹Õé

¢éíÁÙÅ¹Õé¨ĐãĚéÃÒÂÅĐàíÕÂ
´à;ÒèÂÇ;Nº¢éíÁÙÅ¢íŚÂĐºº.ÔèàÅ×í;äÇé«ÖèŚÊèŚ¼Åµèí»ÃĐÊÔ·,ÔÀÒ¾
¢íŚ;ÃÖ¿Ô;â ÅAÇA

μÒÃÒ§¹Õéꞡ×ÍÃÒÂ¿ÒÃä¿À
áÀĐꞡéÍÁUÃàÇÍÀªNè¹.Õèà¿ÕèÂÇꞡéÍ§¿Ñ¹.ÕèÁÕ¿ÒÃãªé¿Ñº¿ÒÃ¿
“Íã¹ꞡ³Đ¹Õé

Ë¹éÒ;ÒÃµÑé§µèÒ;ÒÃ·Ñ;ÒÃáí»¾ÅÔàµ^aÑ¹ã^aéã¹;ÒÃ·Ñ
‘CÔşµÔáE¹è§çİŞE¹éOµèQŞáí»¾ÅÔàµ^aÑ¹AĐĖÇèQŞ‘ÍáE‘ş¾ÅáÅĐà
‘Ė;ì·İ»ĖÁOĖ‘İâ‘AµÑé§µèO·ÔĖĐáí»¾ÅÔàµ^aÑ¹

ÃÒÂ;ÒÃ¹Õé¤×ÍÃÒÂ;ÒÃáí»¾ÅÔà¤Ñ¹.Õèâ»Ãá;ÃÁ"Ñ';ÒÃà´Ê;ì·í»"Ñ
´;ÔÃÍÀUèã¹¢³Ð¹Õé
àÃ×Í;áí»¾ÅÔà¤Ñ¹"Ò;ÃÒÂ;ÒÃà¾×èÍµÑé\$¤èÒ¤Í¹;Ô;Ô;ÒÃ"Ñ
´;ÔÃáí»¾ÅÔà¤Ñ¹ á;éä¢ÀÒÂ;ÒÃâ´Ããé»ØèA "à¾ÕèA" áÃÐ "ÃºÍ;
·ÕèÍÀUè·Õ\$¢ÇÒ

í»ØèÁ¹Õéà¾¼×èíà¾¼ÔèÁâ»ÃájÃÁáí»¾¼ÅÔàªªÑ¹áººãËÁè¢Í§ÃÒÂ¡ÒÃáí»¾¼
ÅÔàªªÑ¹.Ôèâ»ÁájAA"Ñ´¡OAà Ê¡·l»"Ñ´¡OAÍÂUè

j´»ØèÁ¹Õéà¾×èÍÀ°áí»¾ÀÔàª¹.ÕèàÀ×íäÇéã¹¢³Ð¹ÕéÍí;¨Ò;ÃÒÂ;ÒÃáí»
¾ÀÔàª¹.Õèâ»Áá;AA¨N´;OÃà´Ê;ì·l»¨N´;OÃIAUè

j´»ØèÁ¹Õéà¾¼×èÍĀ°áí»¾¼ĀÔàªªÑ¹.ÑéŒĚÁ´Íj¨¨ÒjÃÒÂjÒÃ
ªÓàµ×í¹: jÒÃj´»ØèÁàĚĀèÒ¹Õé¨Đà»ç¹jÒÃÃÕà«çµjÒÃµÑéŒªèÒ·ÑéŒĚÁ
´.ÕèªØ³ă éjOE¹´ăÇéEOEĀÑ°áí»¾¼ĀÔàªªÑ¹

jÒÃàÅ×ÍjµÑÇàÅ×Íj¹Öéà»ç¹jÒÃjÓË¹
ãËéË¹éÔµèÖ§Í§áI»¾ÅÖàªªN¹»ÅÖj⁻çÖé¹ã¹´íaÊ´§¼Å·ÖèªØ³ä´éjÓË¹
´äÇéàÉAI

¿ÔÅ´ì¹Õé"ĐÃĐ°ØÇèÒ"ĐáÊ´şáí»¾ÅÔàªÑ¹.Õèä
´éàÅ×lᵢäÇéã¹¢³Đ¹Õéã¹"íaÊ´ş¼Å ("IAO¾) "Íă´EOᵢä
´éàÅ×lᵢµNÇàÅ×lᵢ "àAÕèAà»O´ãªeşO¹ái»¾ÅÔàªÑ¹ã¹Ë¹éÒ"ÍËÁÒÂàÅ¢"
äÇé

Èò;∅³àÅ×íµÑCàÅ×í¹Ôé â»Ãá;ÃÃ~Ñ;òÃàÊì·Í»·ÐµÔ´µÒÁ¢¹Ò
 àÐµÒÁÊ¹é§µÇÍÊ¹éÒµèÒSál»¾¼ÀÒàªN¹¹Ôé
 àÅ×èì∅³àÃÒèÀµé¹ãæSÒ¹ál»¾¼ÀÒàªN¹ â»Ãá;ÃÃ~Ñ;òÃàÊì·Í»·Ð;ÓË¹
 Ê¹éÒµèÒSál»¾¼ÀÒàªN¹¹ÔéãÊéÀÒ¢¹Ò
 àÐµÒÁÊ¹é§µÒÁ·ÒèªN¹·Ò;äÇéì¹Ê¹éÒ¹Ôé

μÑÇàÅ×Í;¹Öéãªéã¹;ÒÃ;ÓË¹ÇèÒĐãËé;ÒÃ¢ÂÒÂ¢¹Ò
E¹éOμèQ\$ál»¾ÅÒàªN¹ãÊŠàμçAE¹éQÌà©¾ODÌÖèáÊ´\$ÍÂÙè â
´AäAè¢AOA;OAáE´\$¼AãEéàμçA¾×é¹Öèà´Ejì·l»·Né\$EA
«Öè\$IO´ãªéEAOAE¹éO´l

àÅ×ÍµÑÇàÅ×Í¹Õéà¾×èìàÃÔèÁãªésÒ¹áí»¾ÅÔàªÑ¹¹Õé¹à
´Éì·Í»áí»¾ÅÔàªÑ¹·Õèä´éìÖÉ¹`äÇéÍÖìâ»ÁáìAAÉ¹Öè§
µÑÇÍÂèÒ§àª¹ªØ³ÊÒÁÒÃ¶ÊÃéÒ§à
´Éì·Í»à¾ÖèAÇÖé¹à¾×èìãªésÒ¹IAèÖ§í×è¹àª¹ÊÓËÃÑºàÇÇºàºÃÒà«ÍÃì
ÉÓÉANºãªéìèO¹ÍÒàAAì¹ìàE¹×Í´Öìà´Éì·Í»¶Í§ÇO¹ã´ÇÉì·Õèã»ç¹Ö¿IAµì

»é^{1a}xèíà
Éì·Í»ál»¾ÅÔàªÑ¹.ÕèÊÃéÒ§Öé¹ÊÓËÃÑ⁰ã^aésÒ¹Íxè¹ã¹μÑÇàÅ×Í¹Õé
¹Í·Ö¹ÖéªØ³ANŞÉÔAOA¶ã^aé»ØèÁá⁰⁰·AI»·OC¹ã¹Í·OÃàÅ×Íà
Éì·Í»·ÕèªØ³EAéOŞăÇéEOÉAN⁰ál»¾ÅÔàªÑ¹Íxè¹
¿ÔÅ¹Õé·ĐÁÕ;çµèíàÁ×èÍªØ³ă
é·OàªA×èÍŞÉAOAàÅ×Í;μÑÇàÅ×Í; "àÃÔèÁã^aésÒ¹ál»¾ÅÔàªÑ¹¹Õéã¹ÍÕ;
àÉì·Í»É¹Oè§"

Ë¹éÒÎĴμϣÕÂîãªéã¹;ÒÃ»ÃÑºà»ÅÕèÂ¹ "ÎĴμϣÕÂî" à¾¼xèĴ;ÓË¹
´μΟάΕ¹è§Ε¹έΟμèΟ§άλ»¾¼ΑΟàϣªN¹⁰¹à´ΕĴ·Î»´έÇΑμΝÇϣØ³àί§

iÒÃã^aéᵂÕÂî¼ÊÁ¹Õé·ĐÂéQÂĚ¹éÒμèÒ§.ÕèjÓÃÑ§ã^aé§Ò¹ÍÂÙèã¹ϕ³Đ¹Õé
(·.OèjOÃÑ§·Ó§O¹ÍÂÙè) ä»AN§ÍOj·ÍAO¾⁄⁄E¹Oèšâ´AÍÂÙèã¹μOáE¹èšà
ÕAÇjN¹

⌘ÕÂ½ÊÁ¹Õé¨ĐÂéÒÂË¹éÒµèÒ§.ÑésĚÁ´ã¹´ÍáÊ
´§½ĀāĀĐáĹ»¾ĀŌà⌘ªN¹.ŌèãªésO¹ĪAUèã¹¢³Đ¹Ōéä»ÂÑ§ÍŌĵË¹éÒ¨ÍË¹Ōè§

ϣÕÂ½¼ÊÁ¹Õé¨ÐÂéÒÂË¹éÒµèÒ\$Í\$áÍ»¾ÅÔàϣªÑ¹.Ñé\$ËÁ´ä»ÂÑ\$¨íaÊ
´\$½¼Å«Ôè\$AÔàAÔËì¾¼lÂàµlAìlAUè

ËÒ;ºØ³ÁÕà´Êì·Í»áí»¾¼ÅÔàºªÑ¹.ÕèãªésÒ¹ÍÂÙèËÀÒÂË¹éÒ
ºÔÀì¼ÊÀ¹Ôé´Đà»ÀÔèÀ¹·Ôìà´Êì·Í»Ê¹ÔèSä»ÂÑSÌÔìà´Êì·Í»Ë¹ÖèS
ºØ³ÊÔÀÔÀ·ÍìºÔÀì¼ÊÀ¹Ôé«éÔìN¹ÊÀÔÀºÂÑéSà¾¼×èÌÇ¹Uà
´Êì·Í»áí»¾¼ÅÔàºªÑ¹.ÑéSÊÀ´.ÔèãªésÒ¹ÍÂÙè

à³/₄ Global Setting »ÃĐıÍ°
éÇÂµNÇàÃ×ıı«QèŞà»ç¹µÑÇÃèÇÁıÍŞâ»ÃájÃÁıÑıÒÃà
Éıııı»áÃĐâ»AájAAıNıÖAáı»³/₄ÃÖà^aN¹.NéŞEÁı

ıÖÃàÅ×Í;¢ÂÒÂ¢¹Ò´áı»¾ÅÔàªªÑ¹ãĖéáĖ´š¼Åã¹ "à´Êı·Í»·ÑésĖĖÁ´"
ĖAOA¶OSıOA¢ÂOA¢¹O´áı»¾ÅÔàªªÑ¹ãĖéáĖ´š¼Åàµ¢AĖ¹éOà´Êı·Í»
AÇA¶OSıA³O·Oèµéıš¢AOAıOAáĖ´š¼Åà»ç¹EĖOAĖ¹éO´ı
ıÖÃàÅ×Í;¢ÂÒÂ¢¹Ò´áı»¾ÅÔàªªÑ¹ãĖéáĖ´š¼Åã¹ "Ė¹éO´ı·ŖèáĖ´şÍĖÙè"
ĖAOA¶OSıOA¢ÂOA¢¹O´áı»¾ÅÔàªªÑ¹ãĖéáĖ´š¼Åàµ¢AĖ¹éO´ıà©¾ŖĐã¹ıà´ŖA·ŖèãªéıĖÙè

jÒÃjÓË¹ãªéØ³ÊÁ°ÑμÔ¹Õé.ÓãËéÁÕàÁ¹ÙÂèÍÂ "NVIDIA Desktop
Manager"
à¾ÔèÀçÖé¹ÁÒã¹àÁ¹ÙÃĐ°°çÍŠË¹éÒμèÒ§ál»¾ÅÔàªÑ¹.ÕèÍÂÙè
éO¹⁰¹.Né§ÊÁ´àÁ¹ÙÂèÍÂ¹ÕéĐªèÇÃËéàçéOãªé¿Ñ§jªÑ¹jOA´N
´jOÃál»¾ÅÔàªÑ¹.Né§ÊÁ´ãé§èOÃáÃĐAC´àAçÇAOè§çOé¹â
´ÄäAè´Oà»ç¹μéÍ§à»Óª¹â.ÅÅ¾Oà¹ÃçÍ§â»ÁájAA´N´jOAà´Ejì.Ì»
ªØ³ÊÒÁÒÃ¹àçéÒÊÙèàÁ¹ÙÃĐ°°çÍŠË¹éÒμèÒ§ál»¾ÅÔàªÑ¹ã´éâ
´AªAOjçCO·OèãμàμOÃ°OAìÊÃ×jªÃÔj·OèäÌª¹àÃçjæ
çÍ§ál»¾ÅÔàªÑ¹«Oè§IAÙè´éO¹«éOAEØ´çÍ§ãμàμOÃ°OAì

jÒÃàÅ×ÍjμÑÇàÅ×Íj:¹Öé"ĐªèÇÂãĚéâ»Ãá;ÃÁ"Ñ´jÒÃà´Êjì·Í»»éÍsjÑ¹ÇÔ¹â
Çì»êl»lN»AD´NºĚŮŮ"Qj;OÄ¢AOAĚA×l;OÄáA;ll;à»ç¹ĚÍŮ"lAO¾
(ĚA×lAOj;ÇèO¹Né¹) â´A;OÄjOĚ¹
μOáĚ¹èŮ»êl»lN»ãĚAēãĚéà¢éOjÑºĚ¹éO"Í

àÅ×ÍµÑÇàÅ×Í;¹Öéà¾×èÍÑ
´E¹éÔµèÖ§»êÍ»ÎÑ»ãÉÍÃUèµÃ§;ÅÒ§Ë¹éÒ´Í·Öè«Ø³àÅ×Í;àÊÁÍ

àÅ×Íj·ÍÀQ¾.Õèø³μέί§;ÒÃãĚĚ¹έΟμεò§»êÍ»ÍÑ»ÍÎÙèμÃ§;Åò§ â
´Ä;OÄ`ì¹Oé·ĐAÖ;çμεlàA×è|▯Ø³.OàøA×èl\$EAÖÄàÅ×Íj»ØèA""N
´ãĚĚ¹έΟμεò§»êÍ»ÍN»»AOj_¢Oé¹μA§;Åò§Ě¹έO`ÍEAÖÄàA¢"

μÑÇàÅ×j̃:1Öé·ÓãĚéĚ¹éÒμèÒ§»êj̃»ÍÑ» («Öè§¢ÂÒÂj̃ÒÃáĚ
§^{1/4}Ää»ÄÑ§EÄQAE¹éȮI) İÄUèμASj̃ÄO§İáE §^{1/4}Ä·QèÄOàªİÄìà«İÄì
à¹×èj̃§̇Oj̃AQªÇOAâ»ç¹ä»ä´éAOj̃·OèEØ ÇèOªØ³j̃ÓÄÑ§ã^aéSO¹İáE
§^{1/4}Ä¹Ñé¹İÄUè

μÑÇàÅ×í_i¹Õé°ĐÑ¹.Ö_iË¹éÒµèÒ§»êÍ»ÍÑ»ϕÍ§áÍ»³/₄ÅÔà^σ^aÑ¹äÇéã¹Ë¹éÒíà
OAC_jN⁰Ë¹éÒµèÒ§áÍ»³/₄ÅÔà^σ^aÑ¹à´ÔÁ·Ôèã^aéÉAéÒ§Ë¹éÒµèÒ§¹Né¹
ËO_jË¹éÒµèÒ§»êÍ»IN» "3/4ÅO´" ä»»AQ_j·OèÍO_jíáE´§¹/₄ÅË¹Oè§
â»AáíAA·N´_iOAã´Ë_j·I»°ĐàÅ×è¹ä»IAUè·OèíáË
´§¹/₄ÅϕÍ§Ë¹éÒµèÒ§áÍ»³/₄ÅÔà^σ^aÑ¹¹Né¹

j´»ØeÁ¹Õéà¾×èlàÃÕÂjµèÒÃèÇÁ·Õèà»ç¹
Õ¿lÀµiáÃĐlµµOAìçlšâ»AájAAˆN´jOAàÊjì·Í»
ËÁÒÂàËµØ·
jOAj´»ØeA¹Õé·ĐäÁèÊè§¼ÅµèÍjÒÃ»ÃÑºà»ÃÕèÂ¹áÍ»¾ÅÔàªÑ¹·ÕèµØ³ä
é·OäÇéã¹E¹éO Application Management

j'»ØèÁ "µjÅs" à¾×èÍÂ×¹ÃÑ¹áÅĐ¹Ó;ÒÃà»ÃÕèÂ¹á»Ås.ÕèαØ³ä
é·Oä»ãªé;NºαèO·Ñ'jOÃà'Ejì·l» ÈÃÑs·Oj¹Né¹ãÉé»Ö
É¹éOµèO\$çÍ\$αl¹â·AA¾Oà¹Å

j´»ØèÁ "Â;àÂÔ;" à¾×èl»Ô´Ë¹éÒµèÒ§µí¹â·ÃÅ¾Òà¹Å¢Íſâ»Ãá;ÃÁ·Ñ
jÔÀà´Ê;ì·l» â´ÃäAèµéIſ°N¹.Ö;EA×l¹O;ÔAà»ÃÖèA¹á»Ãſä»ãªé
µÓàµ×Í¹: "ĐÁŒ;ÒÃÂ;àÂÔ;j;ÒÃµÑéſµèÒ·ŒèµØ³ă´éà»ÃŒèÂ¹á»ÃſäÇé

j'»ØèÁ"ujÅšã^aé" à³/₄xèíã^aésÒ¹áÅĐ⁰Ñ¹.ÖjjÒÃà»ÅÕèÂ¹á»Åš^aèÒ.Ñé\$ËÁ
'ÉÅÑ\$Öj¹Né¹ãÉéà»Ô'É¹éOμèO\$í¹â.ÅÅ³/₄Oà¹Å¢l\$â»AájAA"N'jOAà
Éjì.í»

⌘Ø³ÊÒÁÒÃŦàÅ×Í;áÍ»¾ÅÔà⌘Ñ¹áººãËÁèä´éâ´Âãªéä´ÍĐÂçÍ;¹Õé
«ÕèŠ´Đ´N´;ÔAâ´Ââ»Aá;AA´N´;ÔAà´Ë;ì·l»

ÃÒÂ;ÒÃ¹Õéà»c¹ÃÒÂ;ÒÃáí»¾ÃÒàªÑ¹.Õè;ÓÃÑsãªésÒ¹ÃÙèã¹à´Ê;ì·í»
ªØ³|Ó·àÃ×|;áí»¾ÃÒàªÑ¹·Ö;ÃÒÂ;ÒÃ¹Õé ÉA×|ÃĐºØáí»¾ÃÒàªÑ¹|xè¹
àªè¹ áí»¾ÃÒàªÑ¹.ÕèäAèä´éãªésÒ¹ÃÙèã¹¢³Đ¹Óé â´Ã;ÒÃ;´»ØèA
"àºÃÖÈi"

j'»ØèÁ¹Õéà^{3/4}xèÍà»Ô'ä'ÍĐĂçÍ;ăĴĂì«ÖèξϣØ³àĂ×Í;áÍ»^{3/4}ĂÔà^aÑ¹ÇÔ¹â
ÇÊiăĚéâ»Ăá;ĂĂ'N'jÔĂă'Êj;·l»Ôà¹Ô¹jÔĂ

ı'»ØèÁ¹Õéà¾¼×èÍÂ×¹ÂÑ¹ă¿Âî»ÃájÃÁ·ÕèσØ³àÅ×ÍjăCé
ăĒéà»ç¹áı»¾¼ÂÖàσªN¹ăĒĒē·Öèâ»AájAA"NıÖAà´Ēıı·ı»"Đ´Óà¹Ô¹ıÖÃ

j'»ØèÁ¹ÕéËÒ;¤Ø³äAèµéÍ§;ÒÃàÅ×Í;áÍ»¾ÅÔà¤ªÑ¹ã¹¢³Ð¹Õé ¨ÐÁÕ;ÒÃ»Ô
ä'ÍÐÁçÍ;áÍ»¾ÅÔà¤ªÑ¹ãÉAè â´AäÁè·Ö;ÔÃà»ÃÖèA¹á»Å§;ÔÃµÑés¤èÔä´
æ

ä´ÍÐÅç¡¹Öéãªéã¹ÒÃ»é¹ª×èlà´Êì·Í·Öèà»Ô´á¹»¾ÅÔàªÑ¹ãËÁè

»éí^{1a}×èlà´Êì·Í»·ÕèÁÕìÒÃà»Ô´áí»^{3/4}ÅÔà^aÑ¹ãËÁèäÇéã¹ä´ÍĐÅçì¹Õé
¹ì·Òì¹Õé ¢Ø³ÃÑŞËÒÀÒÀ¶àÅ×ì^a×èlà
´Êì·Í»·Òì^a×èlàí»^{3/4}ÅÔà^aÑ¹ì×è¹·Õèä´éÃĐ^oØäÇé
µÑÇÍÂèÒŞà^aè¹ ¢Ø³ÍÒ·µéíŞìÒÃãËéà´Êì·Í»ÇÍŞàÇç^oà^oÃÒà«ÍÃìã^aé^a×èíÇèÒ
"àÇç^o" â»Aá;AÁÍÒàAÁìã^aéÇèQ "àAÁì" ¢Ø³EA^oÑµO "Íµ¢ÓÁì"
ÇÍŞã»Aá;AA´N´ìOÀà´Êì·Í»´ĐãËé¢Ø³àÅ×ììÒÃ·ÓŞÖ¹ÇÍŞà
´Êì·Í»áí»^{3/4}ÅÔà^aÑ¹µèÖŞæ ä´é´éÇÂµ¹àíŞ

í»ØèÁ "µ;Å\$" à¾×èíãéá×èíà´Êì·Í»ª×èíãËÁè
ªØ³"ĐăÁèEOÁOÁ¶í»ØèÁ¹Oéă é¹ÇèOªØ³"Đ»éí¹ª×èíà´Êì·Í»·Õèãéáé é

ı'»ØèÁ "ÂıàÅÔı" ËÒıϣØ³äÁèμέί§ıÖÃ»éı¹ª×èıà´Êı·Í»ã¹¢³Đ¹Œé

⌘ÕÂì¼ÊÁ¹Õé·ĐáÊ
´šà⌘ÍÀìà«ÍÀìÀU»EÕèàËÅÕèÂÁá^{oo}.Ö^oà¾×èíăËé⌘Ø³;ÓË¹
´μOáE¹èšà⌘ÍÀìà«ÍÀìÍšàAOËìä´é

àÅ×ÍµÑCàÅ×Í¹Œéà¾×èíãĚéĚ¹éÒµèÒ§»ÃÒĭ̄.ŒèĚ¹éÒ̄íã
Ě¹éÒ̄ĬĚ¹Œèšà¾ŒÅŞĚ¹éÒ̄là'ŒAÇ ¢³Đ.Œè▯³ãªéàÃŒĚìÃŒĭĚ¹éÒµèÒ§

μÑÇàÅ×í;¹Öé`ĐÁÕ¼ÅµèÍİşı»ÃĐ;í°ă¹ÂÙÊà«ÍÃíÔ¹àµíÃìà¿«⁰¹ÇÔ¹â
CÊİçİşàşÅ×èİşăşÅàí¹µì à^{a¹}
ÅÑ;E³ĐçİŞ·OE;í°OAİáÅĐE¹éÒµèÒŞÊÅÑ°;ÒÃ·ÓŞÒ¹

àÅ×ÍµÑÇàÅ×Í;¹Öéà¾×èíãªésÒ¹Ë¹éÒµèÒ§ÊÅÑº;ÒÃ·Ó§Ò¹ «Öè§ä
´éANº;OÄ;ÖË¹ ã¹âEA´ TwinView ãÉéáE´§¼Å·Öè;Öè§;ÅO§E¹éO´I
¹;¹Ö;¹Öé ¢Ø³ÂN§EOAOA¶ãªéE¹éOµèO§
´N§;ÀèOÇÉANº;Nºáí»¾ÅOàªN¹·ÖèãªésÒ¹ºà´Ê;ì·Í»µèÒ§æ ä´éÍÖ;´éÇÂ
Ë¹éÒµèÒ§ÊÅÑº;ÒÃ·Ó§Ò¹¹Öé´Ð»ÃÒ;¬ÖÖé¹àÁ×èí;ªÖÂ¼ÊÁ Alt+Tab

iÒÃ·ÓàgÃ×èÍ§ĚÁÒÂàÅ×Íj·ÕèμÑÇàÅ×Íj¹Õé¨Đ·ÓăĚéĚ¹éÒμèÒ§ÊÃÑºiÒÃ
·ÖŞÖ¹»ÄÖj⁻⁰¹·İÄÖ¾·Öè∅³iÖĒ¹'ăÇéàĒÄİ

àÅ×Í_j¨ÍÀÒ¾·Õè∅³µéÍ§;ÒÃãĚéáÊ´§Ě¹éÒµèÒ§ÊÅÑ°;ÒÃ·Ó§Ò¹ â
´Å∅³EOAOÄ¶àÅ×Í_j¨O_iÍÀÒ¾·Õèãªé§O¹IAUèã¹¢³Đ¹Óéà·èO¹Né¹

àÅ×ÍµÑÇàÅ×Í;¹Öéà¾×èíãĚé·ÒÊ;ìºÒÃì·ÓŞÒ¹;Ñº·ÍAÒ¾··ía´ÕÂÇ
à¾×él»élŞ;N¹ăĂèãĚéÁO;OĂăéŞO¹ŦéOÁ·IAO¾

μÑÇàÅ×í|àËÄèÒ¹Õé¨Đ;ÓË¹ÇÔ_Õ·Õèâ»Ãá;ÃÁ¨Ñ´;ÒÃà´Ê|ì·Í»|ÓË¹
μÓáE¹è\$Ç|\$E¹éOμèO\$»êÍ»ÍÑ»ÃÇÁ¶Ösä´ÍĐÄç|;º|;«ìçé|¤ÇÓÁáĐä
´ÍĐÄç|;ál»¾AOà¤N¹

àÅ×ÍµÑÇàÅ×Í;¹Öèà¾×èíãªésÒ¹µØ³ÊÁºÑµÔ«ÙÁ
«Öè§ Ð¢ÅÖÅÖ¾ã¹⁰AQàÇ³.ÖèÅÖàµÍÀì«ÍÀìÇÍàÁÖÈíÎÙè
ÅÖ¾.Öè¢ÅÖÅáÁéÇ Ð»AQ; ¯¢Öé¹⁰¹ÍÖ; ÍÅÖ¾E¹Öè§«Öè§äAèÁÕàµÍÃìà«Í
ÀìÇÍàÁÖÈ; òÅàÅ×è¹àµÍÀìà«ÍÀìÁÖÈìä»·Öè ÍÅÖ¾ã´
Ð·ÖãÉéÅÖ¾.Öè«ÙÁäÇéà»ÁÖèA¹ä»áE´§·ÖèÍÖ; ÍÅÖ¾â´ÁÍÑµâ¹ÁÑµÔ
µØ³ÊÁºÑµÔ«ÙÁ Ð·Ó§Ò¹;çµèìàÅ×èÍµØ³ä
´éàª×èÍµèÍ ÍÅÖ¾ÊÅÖÅ Íä¢éÖ´éÇÁ;N¹áÅÐµØ³ä´éàÅ×Í;âËÁ
´ÍÖã¢ÅÖÅÖ¾ã¹á¹Ç¹¹EAXÍÁ¹ÇµNé§äÇéáÁéÇ

àÅ×ÍµÑÇàÅ×Í;¹Öéà¾×è¢ÂÒÂÀÒ¾â´ÂãªéÊà;Ááºº Filtered
(áºº»ÁÐÁÖ³¤èÖ)

ϣØ³ÊÒÁÒÃŀãªéİµϣÕÂİµèİä»¹Õéà¾×èİϣÇºϣØÁϣØ³ÊÁºŃµÔ«ÙÁă´é
ÇÖÖİOE¹İİµϣÕÂİ·ĐªÁéOAİNº·Öè·Õã¹á·çº "Hot Keys" â ÁªÅÖİ·Öè¿ÔÅ
İ áÅĐİ·ϣOAİ¼EA·ÖèϣØ³µéİİİOA
ËÁÒÂàËµØ: İİµϣÕÂİ·ĐªÁè·ÓŞÖ¹àÁ×èİϣØ³à»Ô´Ë¹éÒ "Zoom" ËÃ×Í "Hot
Keys" ¢éOŞăÇē·NéŞ¹Öéà¾×èİ»éİİİN¹ăAèăËéϣØ³İOE¹
İİµϣÕÂİăËAè·Nº«éİ¹İNºİİµϣÕÂİ·ÖèăéŞÖ¹IAUè

ÎíµϣÕÂì¹Õé¨Ðà»Ô´ËÃ×Í»Ô´;ÒÃ·Ó§Ò¹ϣØ³Ê°ÑµÔ«ÙÁ

ÎíµϣÕÂì¹Õéà¾ÔèÁÃĐ´Ñº;ÒÃ«ÙÁÀÒ¾

Îíµ²ÕÂì¹ÕéÅ´ÃÐ´ÑºìÒÃ«ÙÁÀÒ¾

¾ÒÃÒÁÔàµÍÃ¹Õé·ĐÃĐ°ØÇèÒÁÕ:ÒÃ»ÃÑ°:ÒÃ«ÙÁÀÒ¾¼jÕè²ÃÑésµèÍÇ
Q¹Q·ÒàA×èläAèAÖ:ÒAàA×èl¹àAOËj (»jµÖ·ĐAOjOA»ANº:OA«UAAO¾¼â
´AINµâ¹ANµQ·Øj²ANés·OèàA×èl¹àAOËj) â»A
´··OăCéÇèÖ:OAă¾¼OèA²èOă¹¾¼QAOAOàµÍÃ¹ÕéÍÒ··ÓăĚé»ÃĐÊÔ·,ÔÀÒ
¾¼jOA·OSO¹çISADººEA×ÍÁl»¾¼AOà²ªN¹A´A§

ϣèÒã^{13/4}ÒÃÒÁÔàμÍÀì¹Õéà»ç¹μÑÇàÅ¢áÊ´§;ÒÃ´ÕàÅÂîâ
´AAQÊ¹èÇÃà»ç¹AOÅÅQÇO¹O.O
jèl¹.Oè`ĐĖĀN⁰¡OĀ«UAAO^{3/4}´Oj´ĪÀO^{3/4}Ė¹Öèšă»à»ç¹ÍÕ;´ĪÀO^{3/4}Ė¹Öèš ;ÒÃ
OàAAì¹Oé`Đ^aèÇĀ»é!§;N¹ăAèăĖéAO^{3/4}.Oè«UAăCé";ĪĐâ´´"
ă»AO.N¹.QAĐĖÇèOŠ´ĪAQ^{3/4}ă¹;A³O.OèϣØ³àĀ×èl¹àϣĪÀà«ĪĀîàÁOÈì^{3/4}ĀO
`ă»ăCé⁰¹´ĪAO^{3/4}.OéáĖ´SAO^{3/4}«UAĪAUè
ϣØ³lO´μÑé§ϣèO^{3/4}OAOAOàμĪÀì¹Oéà»ç¹EÙ¹ĀîĖOjăĀèμé!§;ÒÃăĖéÁŌjÒ
Ā´ŌàĀĀî

àÅ×ÍµÑÇàÅ×Í;¹Öéà¾×èìà»ÅÕèÂ¹ÃĐ´Ñº;ÒÃ«ÙÁÀÒ¾·ÖèáÊ´ŚÎÙè â
´Ã´»ØèÅ Ctrl/Alt/Shift ¢éŒäÇé áÅĐàÅ×è¹â´ÃãªéàÅŒÈì

àÅ×ÍÇèÒ“Đã^aéğÕÂ½ÊÁăŦĐËÇèÒ§ Ctrl, Alt áÅĐ Shift
à¾×éİ»ĂŒèÂ¹ĂĐ’N°İŒ«UAă’Ăă^aéàĂŒÈì

Ë¹éÒÎĴμ⊠ÕÂîã^aéã¹ĴÒÃ»ÃÑ⁰à»ÃÕèÂ¹ "ÎĴμ⊠ÕÂî" à³/₄xèĴÓË¹
´μOáE¹è§E¹éOμèOŠál»³/₄AOà⊠^aN¹⁰¹à´ÉĴî·Í»´éÇÅμNÇ⊠Ø³àÍŠ
ËÁÒÂàËμØ: ÎĴμ⊠ÕÂî"ĐăĂè·ÓŠÒ¹àÁxèĴ⊠Ø³à»Ô´Ë¹éÒ."Zoom" ËÃ×Í "Hot
Keys" ⊠éOŠăÇé·Né§¹Oéà³/₄xèĴ»éÍŠĴN¹ăAèãËé⊠Ø³ĴOË¹
ÎĴμ⊠ÕÂîãÉAè·N⁰«éĴ¹ĴN⁰ÎĴμ⊠ÕÂî·Oèã^aé§O¹IAUè

μÑÇàÅ×Í;¹Õé`ĐÂ;àÀÔ;ì;ÒÃãªé¤Ø³ÊÁºÑμÔẢ´ÃÍÂËÂÑ;ã¹ái»¾ÅÔàªªÑ¹
3D
àÅ×Í;μÑÇàÅ×Í;¹ÕéËÒ;¤Ø³μέÍ§;ÒÃãËéái»¾ÅÔàªªÑ¹ϕÍ§¤Ø³ÁÕ»ÃĐÊÔ·,
OAO¾EUSÊØ

μÑÇàÅ×Í;¹Õé¨ĐãªéªØ³ÊÁºÑμÔĀ´ĀĪÂËÂÑ;ă´éă¹;Ã³Õ·ÕèªØ³ăªéâËÁ´ 2x
â´ÂâËÁ´¹Õé¨ĐãËªéªØ³ÀÒ¾¼¢İŞÀÒ¾¼·ÕèªÑ
à´¹ăĀĐ»ĀĐÊÔ·,ŌĀŌ¾¼;ŌĀ·ŌŞŌ¹¢İŞăĪ»¾¼ĀÔàªªÑ¹ 3D à¾¼ÔèÁÊÛŞ¢Öé¹

μÑÇàÅ×Í;¹Õé"ĐàÅ×Í;à·¤¹Ô¤;ÒÃÅ'ÃÍÂËÂÑ;·Õè¶Ù;μέίς·ÕèÁÕã¹ÃØè¹
GeForce3 GPU

¤Ø³Ê°ÑμÔ;ÒÃÅ'ÃÍÂËÂÑ;¶ίς Quincunx "Đ·ÓãËéâËÁ´ 4x AA
·Õè·Ó§Ò¹ªéÒ;ÇèÒάμè"ĐãËé»ÃĐÊÔ·,ÔÀÒ¾·Õè´Õ;ÇèÒâËÁ´ 2x AA

μÑÇàÅ×í₁¹Öé¹Đã^aé^aØ³ÊÁ^oÑμÔÅ¹ÃÍÂËÂÑ₁ä¹éã¹₁Ã³Õ·Öè^aØ³ã^aéâËÁ¹ 4x
â¹Â¹ĐãËé^aØ³À^o¾₄ÇÍ₃À^o¾₄ÊÛ₃Ê^o á^aμè·ÓãËé»ÃĐÊÔ¹·ÔÀ^o¾₄ÇÍ₃ÔÃáÊ¹
¹¾₄ÅÅ¹Å¹éÇÀ^aè¹₁N¹

μÑÇàÅ×Í;¹Öé¨ĐàÅ×Í;²èÒ;ÒÃÅ´ÃÍÂËÂÑ;·Öè´Õ·ÖèÊØ
ãÊë;Nºáí»¾ÄÖà²ªN¹ 3D «ÖèŞÊ¹NºÊ¹Ø¹;ÖÄ·ÖŞÖ¹;ÖÃÅ´ÃÍÂËÂÑ;

μÑCàÅ×Í;¹ÖéˆĐãËéαØ³àÅ×Í;ãªéâËÁ´;ÒÃÅ
AIAÊÃÑ;¢³ĐÃÑ¹ái»¾/ÄÖàªN¹ 3D

ϕéÍÁÙÀà;ÕèÂÇ;ÑºèÒ AGP »Ñ´´ØºÑ¹ã¹àºÃ×èÍ§¼ÍÁ¾ÔÇàμíÃìϕÍ§ºØ³

μÑÇàÅ×í:¹Õé:ĐãĚé∅³àÅ×í:ãªéĨμÃÒ AGP ä´é
éÇÃμ¹àİŞ:Ö;ADººÄèIÆİSAO¾¼;AO;Ö;EO;∅³äÁèá¹èã:ÇèÒ∅³ãªéĨμ
ÄÖ AGP ä´äĚéàÇé¹ªèİŞ.Oà∅Å×èİŞÉAOA¹QéäÇé
ĚANS:Ö;¹Né¹ADºº:Đ;OE¹İNμÄÖ AGP EUŞEØ´â´ÁÍÑμâ¹ÁÑμÔ

»ÃÑ°á¶àÅ×èÍ¹à¾×èÍàÅ×Í;ãéÍÑµÃÒ AGP
éÇÅµ¹àÍŠ·Ö;ÃĐ°°ÃèÍÃÍŠÃÖ¾;ÃÖ¿Ö;

